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Moderated Poster Session I Psycho-social & Prevention Sunday 14 June 2015 – 10:00 – 11:00

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Living with an ICD-recipient: four partner roles and responsibilities

CS Skov,¹ PG Johansen,¹ MB Skov² and A Lauberg¹

¹Aalborg University Hospital, Department of Cardiology, Centre for Cardiovascular Research, Aalborg, Denmark ²Aalborg University, Department of Computer Science, Centre for Socio-Interactive Design, Aalborg, Denmark

Purpose: ICD-treatment and home monitoring have reduced mortality significantly the past two decades. However, little is known about how ICD-recipients and partners cope and experience difficulties in their life with an ICD.

This study explores how ICD-recipients and partners manage life post ICD-implantation. In particular, the study investigates how partners support and care for the ICD-recipient and the impact on their lives in general.

Methods: We conducted qualitative interviews with 19 participants (11 ICD-recipients and 8 partners). Participants were recruited through a database in an ICD-clinic and interviews were conducted in private homes using a semi-structured interview guide. Interviews were recorded and transcribed verbatim. With emphasis on 8 partner interviews, data analysis was inspired by Ricoeur using three comprising levels; naive reading, structured analysis and critical interpretation and discussion. The study was conducted in compliance with the principles of the Declaration of Helsinki.

Results: We found that lives of ICD-recipients and partners were affected. Partners experienced increased limits in everyday life. Often the lack of physical capabilities of the ICD-recipient influenced shared activities and required new considerations. We found that partners lacked knowledge, felt insecure, and took on four roles and responsibilities. We refer to the four roles as; observer, guardian, optimist, and whip. These can be seen as a dynamic continuum with changing roles depending on the situation and condition of the ICD-recipient.

Observer: is passive and reflective, plays a role in the shared life, does not intervene or comment.

Guardian: protects the ICD-recipient from discouragement and depression, is in charge, makes things happen in everyday life and in case of an emergency, secures that everything goes smoothly and forward, ensures a safer life.

Optimist: takes an active part in ensuring a positive outlook in every aspect of daily life by encouraging positive thinking.

Whip: challenges the mental and physical capacity of the ICD-recipient, dictates activities when needed.

Conclusion: Attention in nursing care must be drawn to partners' switch between the four roles in order to support ICD-recipients and partners. Partners have a specific need for information and support in order to interact successfully with the ICD-recipient.

This confirms that awareness in nursing for partners is important and highlights the significance partners play dealing with ICD-treatment and home monitoring.

This new knowledge may contribute to nursing practice and counselling in the ICD-clinic.

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Improving access and equity in reducing cardiovascular risk: Coaching patients On Achieving Cardiovascular Health (COACH)

C F Ski,¹ MJ Vale,² MV Jelinek,¹ V Chalmers,³ K Mcfarlane,³ G Bennett,³ I Scott³ and DR Thompson¹

¹Australian Catholic University, Centre for the Heart and Mind, Melbourne, Australia ²The University of Melbourne, Department of Medicine, Melbourne, Australia ³Queensland Health, Health Contact Centre, Brisbane, Australia

Purpose: In 2011 almost one third of all deaths in the Australian population were attributable to cardiovascular disease, of these 80% were preventable. Telephone coaching programs are flexible, multifaceted and integrated with the patient's primary health care provider. This study aimed to measure changes in cardiovascular risk factors among patients with coronary heart disease (CHD) and/or type 2 diabetes enrolled in a centralised state-wide telehealth coaching program in the public health sector in Australia.

Methods: A population-based analysis of cardiovascular risk factor data collected prospectively as part of The COACH Program delivered through Government's Health Contact Centre. Participants were patients with CHD (n = 1962) and type 2 diabetes (n = 707), of whom 145 were Indigenous. Changes in fasting lipids, fasting glucose, glycosylated haemoglobin (HbA1c), blood pressure, body weight, body mass index (BMI), waist circumference, alcohol consumption and physical activity, as measured at entry to, and completion of, the program were analysed using pair-wise comparison.

Results: Improvements in cardiovascular risk factor status, from entry to completion of the program, were found across all biomedical and lifestyle factors in patients with CHD and/or type 2 diabetes. For both diseases, reductions in serum lipids, blood glucose, smoking habit and alcohol consumption combined with increases in physical activity were the most notable findings. Those most clinically significant were: a decrease in mean LDL-cholesterol from 2.4 mmol/L to 1.8 mmol/L (CHD) and from 2.5 to 2.0 mmol/l (diabetes); a decrease in mean alcohol ingestion from 1.4 to 1.1 (CHD) and 1.3 to 0.9 (diabetes) standard drinks; and an increase in mean physical activity from 142 to 229 minutes (CHD) and from 127 to 182 minutes (diabetes) per week; and a decrease in mean HbA1c from 8.2% to 7.4% for diabetes patients (p<0.001 for all comparisons). Similar differences were found in mean change scores in cardiovascular risk factors between Indigenous and non-Indigenous participants.

Conclusion: A centralised state-wide telehealth coaching program overcomes obstacles of distance and limited access to health services and facilitates guideline concordant decrease in cardiovascular risk.

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Success of smoking cessation is associated with immediacy of quitting after an acute coronary syndrome

M Snaterse-Zuidam,¹ WJM Scholte Op Reimer,² M Minneboo,³ HT Jorstad,³ SM Boekholdt,³ G Terriet⁴ and RJG Peters³

¹Amsterdam University of Applied Sciences, School of Nursing/Academic Medical Center, Amsterdam, Netherlands ²Amsterdam Medical Centre/Hogeschool van Amsterdam, Amsterdam, Netherlands ³Academic Medical Center, University of Amsterdam, Department of Cardiology, Amsterdam, Netherlands ⁴Academic Medical Center of Amsterdam, General Practice, Amsterdam, Netherlands

Background: Guidelines stress the importance of smoking cessation and recommend intensive follow-up. Successful

nonpharmacological strategies for smoking cessation in cardiovascular disease (CVD) patients are, however, still scarce.

Methods: We used data from the Randomised Evaluation of Secondary Prevention for ACS patients coordinated by Outpatient Nurse Specialists (RESPONSE) trial (n = 754). For the current analysis we included all smokers (324/754 (43%)). Successful quitters were defined as those who reported abstinence at one year of follow-up.

Results: The majority of successful quitters succeeded to quit immediately after the event and remained quitted up to one year of follow-up, without extra help (128/156 (82%)). Having higher education (33% vs. 15%, p<0.01) and no history of CVD (87% vs. 74%, p<0.01), were associated with successful quitting. After one year successful quitters more often had a BMI >25 kg/m² compared to smokers (81% vs. 67%, p<0.01).

Conclusion: The majority of successful quitters had stopped immediately after their ACS. It was in their own ability to quit and they remain quitted up to one-year follow-up. There is no evidence to support relapse prevention in ACS patients who stop smoking immediately after the event, and our study indicates that there is no need for it in a large group of patients.

Table 1. Characteristics of successful quitters

	Successful quitters n = 156	Smokers n = 168	P-value
Male, n (%)	127 (81%)	125 (74%)	0.13
College or university	49 (33%)	25 (15%)	p<0.01
No history of CVD, n (%)	136 (87%)	124 (74%)	p<0.01
Risk profile at baseline			
SBP >140 mmHg	36 (24%)	33 (20%)	0.12
LDL >2.5 mmol/L	46 (31%)	66 (39%)	0.15
BMI >25 kg/m ²	116 (74%)	115 (68%)	0.12
Inadequate physical activity†	89 (57%)	98 (58%)	0.81
Risk profile at one-year follow-up			
SBP >140 mmHg	41 (28%)	43 (26%)	0.79
LDL >2.5 mmol/L	32 (22%)	62 (37%)	p<0.01
BMI >25 kg/m ²	127 (81%)	112 (67%)	p<0.01
Inadequate physical activity†	54 (35%)	81 (48%)	0.01

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Dose different type of treatment modalities among patients presented with acute myocardial infarction impact on patients illness perception and their motivation for behavioural changes?

A Al-Smadi,¹ D Fitzsimons,² P Slater,² M Alnimri,³ P Donnelly⁴ and N Herity⁴

¹American University of Madaba, Science, Madaba, Jordan ²University of Ulster, Belfast, United Kingdom ³Queen Alia Heart Institute, Amman, Jordan ⁴Belfast Health & Social Care Trust, Belfast, United Kingdom

Background: Treatment for acute myocardial infarction (AMI) differs according to presentation, and there are claims in the literature that this may impact on patients' understanding of the diagnosis and subsequent behavioural changes.

Aim: to determine if the treatment modality had an impact on illness perception and motivation for behavioural changes across 3 different treatment groups –

ST-Elevation Myocardial Infarction (STEMI) treated by PPCI,

STEMI treated by thrombolytic therapy (THROMB), and Non ST-Elevation Myocardial Infarction (NSTEMI) treated by medication.

Methods: A qualitative, repeated-measure design was used for the purpose to gain data from purposive Jordanian patients diagnosed with AMI and received different treatment modalities. The semi-structured interviews were conducted at patients' home one week after hospitalisation and again 6 months later.

Results: The qualitative thematic analysis of 14 patients' semi-structured interviews at both baseline and follow-up times cannot demonstrate differences between the treatment modalities in illness perception and the motivation of behavioral changes. At baseline, the majority of patients perceived their condition as chronic; had an expectation of consequences arising from the AMI event; considered lifestyle factors to be causes of their illness, believed that illness could be controlled by treatment and lifestyle, and motivated to change their illness related behaviours. At the follow-up time, differences were identified between patients who had symptoms after the AMI and those who did not. Patients without symptoms were more likely to perceive their illness as being acute; they were less likely to be preoccupied with their illness; less likely to perceive consequences arising from the AMI event, and reported lower behavioural changes. Patients with symptoms had a higher perception of the chronicity of their illness; they were more likely to be preoccupied with their illness, and to perceive consequences of their illness and to report a higher rate of behavioural change.

Conclusion: Although the current study did not find differences between the three AMI treatment modalities in terms

of illness perception and associated outcomes, the study findings showed the importance of assessing patients' understanding or illness perception after AMI whatever treatment they received. This is important to ensure they have an appropriate understanding of the nature of their illness and to increase their motivation for behavioural changes particularly for those patients dose not experience symptoms after AMI.

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Patients overcome anxiety and are encouraged to be physical active through exercise-based cardiac rehabilitation

C P Simony,¹ PS Dreyer,² BD Pedersen³ and R Birkelund⁴

¹Aarhus University, Section of Nursing Science, Aarhus, Denmark ²Aarhus University Hospital & Institute of Health, Section of Nursing Science, Aarhus University, Aarhus, Denmark ³Faculty of Health Sciences, University of Southern Denmark, Research Unit of Nursing, Odense, Denmark ⁴Lillebaelt Hospital, Section of Health Services Research / University of Southern Denmark, Vejle, Denmark

Purpose: Patients face demanding and challenging processes when they experience cardiac problems. Exercise-based cardiac rehabilitation is established to enable these patients to move forward to lead a satisfying life. It is recognised that patients fail to join all sessions of the rehabilitation resulting in an alarming problem. It is outlined that barriers for better adherence are related to the fact that the services do not sufficiently address the patients' specific situations. Thus, the request for firmly addressing rehabilitation as responsive to the patients' needs is of paramount importance, and it seems to be crucial to further emphasise the individuals lived experiences when exercise-based cardiac rehabilitation is followed. Hence this study aims to investigate how patients experience exercise-based cardiac rehabilitation in a hospital setting.

Methods: This study, which included nine men and two women with unstable angina pectoris or non-ST elevation-myocardial infarction, used a phenomenological-hermeneutic approach. The patients were followed by field observations during exercise-based cardiac rehabilitation. Focus group interviews were conducted at programme end, and individual interviews were performed 1-2 months later. A phenomenological hermeneutic interpretation was conducted, comprising three methodological steps: naïve reading, structural analysis and comprehensive interpretation.

Results: The preliminary findings are that although physically and especially mentally challenged, the patients were encouraged to maintain an active lifestyle after exercise-based cardiac rehabilitation. Three themes were identified: anxiety to exercise, whereby the patients are initially afraid to provoke another heart attack; an

encouraging training-team, whereby the patients support each other to begin exercising; and growing confidence in the heart, whereby the patients overcome anxiety and dare to be physically active.

Conclusions: Exercise-based cardiac rehabilitation provides a comfort-giving setting that offers peer support and a positive physical perception leading to confidence into that the heart endures physical activity. In addition to serving as physical guidance, exercise-based cardiac rehabilitation offers valuable mental support. The patients find help to overcome an initial anxiety and move forward towards a physically active life featuring a feeling of improved health and new strength. By acquiring this knowledge, future patients might be motivated to participate in the programme.

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Female gender doubles pre-hospital delay times for patients experiencing ST segment elevation myocardial infarction in Saudi Arabia

H Alshahrani,¹ D Fitzsimons,² R Mcconkey² and A Alsamadi³

¹King Saud Medical City, Riyadh, Saudi Arabia ²University of Ulster, Belfast, United Kingdom ³American University of Madaba, Madaba, Jordan

Background: Pre-hospital delay has a significant impact on patients' mortality and morbidity in ST segment elevation myocardial infarction (STEMI). Internationally many factors including female gender have been

implicated, but no research has been conducted in Arab cultures. We aimed to explore the factors contributing to pre-hospital delay among female STEMI patients in Saudi Arabia.

Methods: This sequential, explanatory mixed methods study comprised a consecutive sample of 311 patients, presenting with STEMI to three hospitals, from March 2011–August 2011. Of these, 189 patients (36 females) were eligible and interviewed using the Response to Symptoms Questionnaire. A purposive sample of 18 patients (9 females) then participated in qualitative interviews that were taped and transcribed prior to thematic analysis.

Results: The median pre-hospital delay for males was 5 h and 12.9 h for females ($p < 0.002$). Standard multiple regression determined female gender as the strongest predictor of transfer delay—from decision to seek help to hospital arrival. Qualitative analysis produced five gender-related themes: (a) women require a male relative's permission to seek medical help; (b) women cannot travel to hospital unless accompanied by a male relative; (c) women prioritise family responsibilities over seeking help; (d) women lack knowledge of myocardial infarction (MI) symptoms and treatment; and (e) perception that women should not attract attention.

Conclusion: This study provides new insight into how cultural factors increase pre-hospital delay for women within Saudi Arabia. While the quantitative data demonstrates that women experience much longer delays, the qualitative interviews confirm that cultural factors are implicated. Further research is urgently required.

Oral abstract session I

Doctoral Students

Sunday 14 June 2015 – 11:00 – 12:30

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Relationship between symptoms, clinical factors and self-reported health status in non-surgical patients with aortic stenosis

K Oterhals,¹ R Haaverstad,¹ JN Nordrehaug,² GE Eide³ and TM Norekval¹

¹Haukeland University Hospital, Department of Heart Disease, Bergen, Norway ²Stavanger University Hospital, Department of Cardiology, Stavanger, Norway ³Haukeland University Hospital, Centre for Clinical Research, Bergen, Norway

Purpose: Research reporting self-reported health status in patients with aortic stenosis (AS) that have not undergone aortic valve replacement (AVR) is sparse. This study aimed to investigate the relation between symptoms, severity of AS and patient-reported health status in patients with moderate and severe AS not eligible for AVR.

Methods: In April 2013 a postal questionnaire was sent to 1436 patients diagnosed with AS of which 245 had not undergone AVR. Demographic variables (gender, education, marital status, and employment status), smoking status, symptoms of AS, physical health status (PCS) and mental health status (MCS) were collected by means of patient self-report (SF-12). Medication and severity of AS (Doppler echo examinations) were retrieved from the patients' medical records (ECS/EACTS Guidelines).

Results: Overall response rate was 73%. One hundred and thirty-seven (56%) of the 245 patients without AVR returned the questionnaire. Mean (standard deviation: SD) age was 79 (12) years and 52% were men. Forty-two patients (31%) had a moderate AS and 95 (69%) a severe AS and 20% were in NYHA Class I, 53% in II: 17% in III and 11% IV. Medications were as follows: diuretics (25%), beta-blockers (64%) and statins (58%). More patients with severe AS were on diuretics ($p = 0.035$) than patients with moderate AS, but no group differences were found in use of beta-blockers or statins. Symptoms reported at the time of survey were dyspnoea (52%), chest pain (47%) and light-headedness (43%). No relationships were found between the severity of AS and symptoms. NYHA classification was correlated to severity of AS ($p = 0.014$). Mean (SD) values of physical and mental health status were 37 (12), and 52 (10) respectively, with no significant group differences. The level of dyspnoea and symptoms of light-headedness correlated negatively with PCS (Spearman's rho: -0.557 and -0.538 , both $p < 0.001$) respectively. Chest pain, level of dyspnoea and symptoms of light-headedness correlated negatively with MCS (rho: -0.244 , $p = 0.010$; rho: -0.252 , $p = 0.009$; rho: -0.444 , $p < 0.001$) respectively.

Conclusion: There was a strong association between symptoms and self-reported health status in patients with AS. Severity of AS (defined by Doppler echo examination) did not reflect self-reported symptoms or patients' self-reported health status in this nonsurgical cohort of patients with moderate or severe AS.

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A cardio metabolic high risk individual the process and results of participating in a structured lifestyle intervention program for one year.

M Lidin¹

¹Karolinska University Hospital (Solna), Department of Cardiology, Stockholm, Sweden

Bosse was born in 1954, works as a taxi driver, is divorced and lives alone in a suburb of Stockholm. Bosse is a smoker. He is sedentary both at work and during leisure time. Risk profile; blood pressure 145/85, pulse 75 beats/min, waist circumference 135 cm, body-weight 102 kg. S-cholesterol 6.5 mmol/L, LDL 4.5 mmol/L, HDL 0.9 mmol/L, S-triglycerides 2.8 mmol/L. His family physician refers him to the Life Style Unit, Department of Cardiology at the Karolinska University Hospital. A treatment plan is scheduled that includes enrollment in a structured lifestyle intervention program aiming at reducing cardiovascular risk. The intervention program comprises a person-centered individual visit to a nurse for an initial health check-up and lifestyle counseling. At Bosses first visit to the nurse his risk profile is identified and discussed using a person-centered motivational interviewing technique. The focus is on stop smoking, to reduce sedentary behavior and a general dialogue on behavioral changes. A formal prescription on physical activity for strength training on a local gym twice a week is given. The structured lifestyle program also includes five meetings with a nurse and a physician, focusing on physical activity, sedentary time, food habits, nicotine, alcohol, stress and cognitive behavior therapy. After six months he had made some changes of his lifestyle, e.g. Bosse is considering stop smoking, and a stop date is planned. He started strength training at a local gym and is struggling with brisk walks. His risk profile after six months; blood pressure 125/75 mmHg, pulse 65 beats/min, body-weight 95 kg, waist circumference 118 cm, S-cholesterol 4.9 mmol/L, S-LDL 3.0 mmol/L, S-HDL 1.0 mmol/L, S-triglycerides 1.9 mmol/L. At the six-month visit he was given behavioral counseling from the nurse, using person-centered motivational interviewing technique, to encourage Bosse in his lifestyle changes. The prescription of physical activity and his new food habits was evaluated. At the one year follow-up Bosse looks thinner and is proud over his accomplishment. He is now a non-smoker. His cardiovascular risk is reduced after one year; blood pressure 120/70mmHg, pulse 62 beats/min,

waist circumference 98 cm, body-weight 95 kg, S-cholesterol 4.5 mmol/L, S-LDL 2.8 mmol/L, S-HDL 1.3 mmol/L, S-triglycerides 1.2 mmol/L.

Conclusion: Evidence based lifestyle counseling for risk reduction is of great importance for a high-risk individual like Bosse. Continuity with the same nurse is crucial for these individuals. Successful lifestyle intervention requires setting reasonable goals together with the patient.

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The appropriateness and presentation of commonly available cardiovascular webpages in the Swedish language

L Klompstra,¹ M Johansson Ostbring,² T Jaarsma,³ B Fridlund,⁴ M Liljeroos,⁵ J Martensson,⁶ G Mourad,³ I Thylen,⁵ U Walfridsson⁵ and A Stromberg⁵

¹Linköping University, Department of Social and Welfare studies, Faculty of Health Science, Linköping, Sweden ²Linnaeus University, Department of Medicine and Optometry, Faculty of Health and Life Sciences, Kalmar, Sweden ³Linköping University, Department of Social and Welfare Studies, Faculty of Health Science, Linköping, Sweden ⁴School of Health Sciences, Jonköping, Sweden ⁵Linköping University, Department of Medical and Health Science, Faculty of Health Science, Division of Nursing Science, Linköping, Sweden ⁶School of Health Sciences, Department of Nursing, Jonköping, Sweden

Purpose: To evaluate the appropriateness and presentation of commonly available cardiovascular webpages in the Swedish language.

Method: The Suitability and Comprehensibility Assessment of Material (SAM + CAM) was used, containing six categories: content, literacy demands, numeric literacy, graphics, layout/typography and learning simulation, percentages scores were interpreted as inadequate (0%-39%), adequate (40%-69%), or superior (70%-100%). Within the CESAR network (cesar-network.com) keywords for the Internet were set at: heart failure, myocardial infarction, angina, cardiac arrest, atrial fibrillation, arrhythmia and congenital heart disease. Google.se was used as search engine. Two evaluators independently evaluated webpages. An additional open question was added to obtain the researchers' opinion on what was good and bad about the webpages they evaluated.

Results: In total 27 webpages were evaluated. Almost half of the webpages were scored as inadequate for cardiovascular patient to receive information concerning their disease (48%), 30% as adequate and 22% was scored as superior. Wikipedia was contained the least adequate webpages (17-39%). Web pages on cardiac arrest scored the most adequate on the Internet (63%) and arrhythmia and congenital heart defect/diseases as the most inadequate (35% and 33%). The content was rated as inadequate in 41% (n = 11) of the found webpages; the literacy demands were in 19% inadequate (n = 5). Four webpages did not use numer-

acy literacy, 22% used inadequate numeracy literacy (n = 5). Three webpages did not use graphics (11%), 42% used graphics inadequate (n = 10). Typography was inadequate n 19% (n = 5) and learning simulation was rated as inadequate in 78% (n = 21). The webpages that was best from a qualitative point of view was on the website provided by the county councils and regions. The webpages with poorest qualitative content were on the website of Wikipedia with comments like not suitable for patients and missing lots of facts.

Conclusion: Almost half of the webpages, which cardiovascular patients find on the Internet, were inadequate to obtain information. Healthcare professionals should be more aware of what patients read online and be able to recommend appropriate webpages. Further health care providers should be involved in developing new web material.

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The effect of protocolized care on guideline adherence in patients after acute myocardial infarction

H Z R Gerds,¹ G Koster,² MA Kampinga,¹ E Lipsic,¹ B Hiemstra,² E Keus,² IC Van Gelder,¹ P Van Der Harst¹ and ICC Van Der Horst²

¹University Medical Center Groningen, Department of Cardiology, Groningen, Netherlands ²University Medical Center Groningen, Department of Intensive Care, Groningen, Netherlands

Purpose: To evaluate the effectiveness of a secondary prevention clinic for patients after myocardial infarction in terms of guideline adherence in medication and treatment goals and to unravel the reasons for suboptimal treatment during a planned one-year follow-up period.

Methods: A standardized protocol including treatment recommendations and rehabilitation based on the guideline of the European Society of Cardiology (2008) was introduced before the study period. A nurse-specialist was involved in the care of all patients. High-risk patients (i.e. large infarct size, co-morbidities) were also seen by a physician (44%). End-points were percentage of patients treated with all five recommended medication (aspirin, clopidogrel, beta-blocker, angiotensin converting enzyme-inhibitor or angiotensin receptor blocker, and statin) and percentage of patients with treatment goals achieved according guideline (participation in heart rehabilitation, not smoking, heart rate ≤ 70 bpm, systolic blood pressure ≤ 130 mmHg, diastolic blood pressure ≤ 80 mmHg, total cholesterol). Follow-up was complete until April 2012.

Results: A total of 247 patients (59 years of age, 79% males) were included between December 2008 and April 2011. In total 186 (80%) patients received all five medications at the visit one year after their MI. Patients used all medication according the guidelines at 3 months and 1

year respectively. Main reasons for not prescribing medication were unknown (9%), the perceived side effects in 10 patients (4%) and contra-indications in 9 patients (4%). In total 208 patients (85%) participated in a heart rehabilitation program, 186 patients (79%) were not smoking at the visit one year after MI, the target for heart rate was reached in 182 patients (79%), systolic and diastolic blood pressure was reached in 208 and 239 patients (90 and 99%) and total cholesterol was reached in 50 patients (28%).

Conclusion: Our study demonstrates the feasibility of a disease management program in a nurse-led clinic on optimizing secondary prevention, with limitations on achieving optimal medication due to side effects and cessation of medication. Treatment goals might even be higher when doses of medication are titrated faster, although more side effects could occur.

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Mental health prognosis of young venous thromboembolism patients. A nationwide cohort study on psychotropic drug purchases

A Hojen,¹ A Gorst-Rasmussen,¹ GYH Lip,² DA Lane,² LH Rasmussen,¹ EE Sorensen³ and TB Larsen¹

¹Aalborg University Hospital, Aalborg Thrombosis Research Unit, Department of Clinical Medicine, Aalborg, Denmark ²University of Birmingham, Centre for Cardiovascular Sciences, City Hospital, Birmingham, United Kingdom ³Aalborg University Hospital, Clinical Nursing Research Unit, Aalborg University Hospital Science and Innovation Center, Aalborg, Denmark

Background: Chronic medical illness in youth can lead to emotional and behavioural problems and is a risk factor for poor mental health, including psychiatric disorders. Even though venous thromboembolism is a life threatening disease with potentially long-term somatic consequences, the impact on mental health of young venous thromboembolism patients has not been investigated comprehensively.

Purpose: To assess the mental health prognosis of young venous thromboembolism patients using psychotropic drug purchase as a proxy measure.

Methods: A nationwide cohort study was conducted using data from four nationwide registries: (i) The Danish Civil Registration System (ii) The Danish National Patient Register (iii) The Danish National Prescription Registry; (iv) The Danish Medical Birth Registry. From the Danish national patient registry we identified 4,132 patients aged 13-33 with a first-time hospital diagnosis of venous thromboembolism between 1997-2010, and randomly selected a comparison cohort matched individually in a 1:5 ratio based on sex and age. Participants were followed in the nationwide Danish National Prescription Registry for first psychotropic drug purchase. The analyses were stratified on sex, venous thromboembolism type and calendar period, and for each psychotropic drug endpoint: antipsy-

chotics; anxiolytics; sedatives; antidepressives. To ensure that the risk difference was assessed between reasonably comparable venous thromboembolism cases and population controls, we also considered analyses adjusted for the effect of recent pregnancy and recent provocation.

Results: The crude risk of psychotropic drug purchase was substantially higher among young venous thromboembolism cases compared to population controls. Among cases, the 1-year risk of psychotropic drug purchase was 7.1% (95% confidence interval [CI] 6.3 to 7.9) and the 5-year risk 22.1% (95% CI 20.7 to 23.5). This corresponded to 1- and 5-year risk differences relative to the controls of 4.7% (95% CI 3.9 to 5.5), and 10.8% (95% CI 9.4 to 12.3), respectively. Adjustment for the effect of recent pregnancy or recent provocations attenuated risk differences to 4.1% (95% CI 3.5 to 5.1) after 1 year and 9.6% (95% CI 8.3 to 11.2) after 5 years.

Conclusions: A venous thromboembolism diagnosis in youth may be associated with substantial consequences for the patient's subsequent mental health, as one in five will experience mental health problems requiring psychotropic medication within the first 5 years after diagnosis.

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Competencies needed for patient education in cardiac care and how to become an expert educator: A qualitative study on the view of health professionals with experience in patient education

MH Svavarsdottir,¹ KS Sigurdardottir² and A Steinsbekk¹

¹Norwegian University of Science and Technology, Department of Public Health and General Practice, Trondheim, Norway ²University of Akureyri, School of Health Sciences, Akureyri, Iceland

Purpose: The aim of this study was to investigate health professionals' views on the competencies necessary in conducting high-quality patient education, what they perceive to be characteristics of expert educators and their professional views on how to become one.

Methods: A qualitative study using individual interviews with health professionals in cardiac care. The data were analysed after each interview in an iterative four-step process, using Malterud's systematic text condensation.

Results: The participants were 19 Icelandic and Norwegian registered nurses, physiotherapists and cardiologists, experienced in patient education for individuals with coronary heart disease, who had worked on average for 12 years in cardiac care. Sound updated theoretical and clinical knowledge, along with advanced communication skills, was considered essential for patient education. The hallmarks of an expert educator was seen as the ability to know when a patient is ready to receive information, sensitivity to his or her interests and learning needs, and the ability to adjust the patient education to every patient's needs and the context of the situation. The development

from novice to expert was categorised into four stages: individual patient education, group education, individually tailored counselling and leader in patient education. Guidance from experts in patient education was highly valued, and patients' experiences and questions seen as an important source for improving and guiding knowledge development. Support from employers, a motivating learning environment, and engagement and active participation by the educator were considered imperative for competence development, while time constraints and heavy workloads seemed to be obstacles.

Conclusions: High-quality patient education requires knowledgeable health professionals with advanced communication skills and pedagogical competences that enable them to motivate patients and provide effective patient centred lifestyle counselling. Listening to the patient and being sensitive to his or her learning needs is central in describing an expert educator and in the development from novice to expert educator. Better understanding of the differences between novice and expert educators and their educational needs and the factors that motivate competence development can contribute to improved education of educators, and thus, improved patient education.

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Frailty and quality of life in elderly patients with acute coronary syndrome

M Lisiak,¹ I Uchmanowicz,¹ R Wontor² and K Loboż-Grudzien¹

¹Wrocław Medical University, Department of Clinical Nursing, Wrocław, Poland ²Specialist Hospital. T. Marciniak, Department of Cardiology, Wrocław, Poland

Background: Recently, a growing interest in the assessment of geriatric condition can be observed, particularly in the frailty syndrome (FS) and its clinical significance in elderly patients with acute coronary syndrome (ACS). A negative effect of the FS on the adverse outcome in patients with ACS has been showed. The objective of the ACS treatment is not only a longer life but also improved quality of life (QoL). There are few studies on the impact of FS on QoL.

Purpose: The aim of the study was to investigate the relationship between the global value and domains of the Tilburg Frailty Index (TFI) and the early QoL in domains assessed in the MacNew Questionnaire at discharge of elderly patients with ACS (≥ 65 years old).

Methods: The study was conducted among 91 patients aged 65+ (mean age: 76.7 ± 7.8 ; male: 51.6%) with ACS (STEMI 45%, NSTEMI 45%, UA 10%) with therapeutic strategy: Percutaneous Coronary Intervention (PCI) 72.5%, Conservative therapy (CT) 17.6%, surgical revascularization (CABG) 9.9%. The MacNew Questionnaire and the TFI were used to evaluate QoL and FS.

Results: The frailty syndrome occurred in 82.4%. The average value of points of TFI was 7.43 ± 2.57 . A strongly negative correlation between the global value of FS and global value of QoL was shown ($R_s = -0.514$, $p < 0.05$ and $R = -0.549$, $p < 0.05$, respectively). Negative correlations were demonstrated between the TFI domains and MacNew domains, with the exception of the social dimension of TFI, which correlated negatively only with the level of emotional domain of MacNew ($R_s = -0.314$, $p < 0.05$). The vulnerability factors that negatively affect the early QoL were: the frailty syndrome, marital status - single (4.25 ± 0.82 , $p = 0.047$), conservative treatment (3.96 ± 0.85 , $p = 0.043$) the incidence of hypertension (4.34 ± 0.83 , $p = 0.038$). Based on the ROC curve the cut-off point ≥ 7 points of TFI (AUC = 75.2%) predicted worse QoL. In multivariate analysis it was found that the value of TFI ≥ 7 points was the only independent predictor of worse QoL ($\beta \pm SE -0.277 \pm 0.122$, $p = 0.026$).

Conclusion: The presence of FS has negative impact on early QoL in patients with ACS. The study suggests that in elderly patients with ACS there is a need to identify frailty.

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How patient-caregiver dyads contribute to self-care in heart failure: typologies and characteristics

E Vellone,¹ CS Lee,² KS Lyons,² F D'agostino,¹ JT Bidwell,¹ SO Hiatt,² HG Buck,³ R Alvaro¹ and B Riegel⁴

¹University of Rome Tor Vergata, Biomedicine and Prevention, Rome, Italy ²Oregon Health & Science University, School of Nursing, Portland, United States of America ³Pennsylvania State University, School of Nursing, University Park, United States of America ⁴University of Pennsylvania, School of Nursing, Philadelphia, United States of America

Purpose: Persons with heart failure (HF) need adequate levels of self-care maintenance, management and confidence to have good outcomes. Caregivers contribute to HF self-care; but, how patient-caregiver dyads function together in their contributions to self-care is largely unknown. The purpose of this study was to identify typologies of HF patient-caregiver dyadic contributions to self-care, and identify characteristic differences among these dyads.

Methods: A secondary analysis of cross sectional data was used to analyze a sample of 509 HF patient-caregiver dyads that were enrolled in 28 Italian provinces. Multi-level and latent mixture modeling were used to identify dyadic typologies based on patient and caregiver contributions to HF self-care. Dyads were further characterized based on patient comorbidity, cognition, activities of daily living (ADLs) and quality of life, caregiver burden, and relationship type (e.g. spouse or adult child) and quality.

Results: Patients and caregivers were 75.6 ± 10.7 and 56.9 ± 14.8 years old on average respectively. A majority of patients were male (55.4%) and in NYHA functional class

I and II (55.8%). Most caregivers were female (52.2%) and were patients' children (34.0%) or spouses (53.4%). Three typologies of HF dyads were identified. The first typology, named "novice and complementary" (22.4%) had the worst self-care maintenance and confidence; patients had higher self-care maintenance than caregivers, but caregivers had higher self-care management than patients. These dyads were predominantly older adults with less severe HF and their adult child caregivers. The second typology was named "inconsistent and compensatory" (56.4%) and reported higher self-care maintenance, but similar management and confidence as those in the novice and complementary typology. Caregivers contributed more to self-care

maintenance, management and confidence than patients in this dyad; patients in these dyads had high autonomy in ADLs, and the highest rates of HF hospitalization. The third typology, "expert and collaborative" (21.2%), had the best self-care maintenance, management and confidence. Patients reported the worst quality of life, lowest autonomy in ADLs and the best relationships with caregivers; caregivers in these dyads reported the lowest burden.

Conclusions: HF dyads work together in different ways to manage HF. Patient and caregiver characteristics of each dyad may be helpful to identify different approaches to self-care within the dyad that may guide tailored intervention for patients and caregivers in HF care.

Moderated Poster Session II

Heart Failure

Sunday 14 June 2015 – 15:00 – 15:30

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Implementation of coping effectiveness training in patients with chronic heart failure: participants evaluations indicate psychosocial benefits

C Nahlen Bose,¹ G Bjorling,¹ M L Elfstrom,² H Persson³ and F Saboonchi⁴

¹Karolinska Institute, Department of Clinical Sciences Danderyd Hospital and Swedish Red Cross University College, Stockholm, Sweden ²Mälardalen University, Academy of Health, Care and Social Welfare, Eskilstuna/Västerås, Sweden ³Karolinska Institute, Department of Clinical Sciences Danderyd Hospital, Stockholm, Sweden ⁴Karolinska Institute, Department of Clinical Neuroscience and Swedish Red Cross University College, Stockholm, Sweden

Purpose: Individuals with Chronic Heart Failure (CHF) do not only suffer from the physical limitations caused by the illness, but anxiety and depression are more prevalent in this group compared to other conditions. They also experience worse quality of life. Depression has been shown to be an independent predictor of mortality in patients with CHF. Psychosocial intervention could be a possible approach to help people with CHF to cope with their illness better. The purpose of the present study was to describe the study design, implementation and participants' evaluations of a stress management program aiming to improve emotional well-being, health-related quality of life and to reduce readmission to hospital.

Method: A randomized controlled study design was employed in which the intervention consisted of Coping Effectiveness Training (CET), a manual-based group intervention based on a cognitive transactional theory of stress and coping. The purpose of CET was to improve skills to appraise stress, teach a number of techniques to cope with stress, and to give an opportunity to interact with other people with similar experiences of living with CHF. The control group (n = 51) received standard health care. The intervention group (n = 52) received seven weekly sessions of CET. Self-assessments of; emotional well-being, depression and anxiety, illness perception, health-related quality of life, coping strategies and social support were performed before the intervention, directly after the intervention, six weeks, six months and one year after the intervention period as well as measuring readmission to hospital. In addition, the participants in the intervention group filled in an anonymous written evaluation, with closed and open ended questions, directly after the intervention.

Results: Preliminary results of the study, from the written evaluation forms, indicate that most of the participants considered they benefited from the intervention (94 %), and that they would recommend it to a friend (97 %). The

free-text answers gave insight into what they explicitly thought they benefited from, such as the means to cope with CHF, acceptance of the illness and meeting other people with the same problems. The majority were pleased with the number (81 %) and length (79 %) of the sessions as well as the number of group participants (73 %).

Conclusion: Stress management intervention for patients with CHF is feasible and appears to provide psychosocial benefits for this patient group. However we are awaiting results from the statistical analysis to complete the evaluation process.

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Predictive value of circulating osteonectin in patients with ischemic symptomatic moderate-to-severe chronic heart failure

A Berezin¹ and A Kremzer¹

¹State Medical University, Zaporozhye, Ukraine

Background: Matrix cellular proteins, such as secreted protein acidic and rich in cysteine (SPARC), play a key role in post-synthetic procollagen processing in heart failure myocardium and regulate cell adhesion, growth factor activity and cell cycle. It has been found that SPARC family member osteonectin (OSN) causes myocardial hypertrophy, increased fibrillar collagen content, stimulates cell signaling, adhesion, survival, proliferation, and migration in several cell types, mediates calcification of the vascular wall, coagulation, and endothelial dysfunction.

Aim: To evaluate the prognostic value of circulating osteonectin for cumulative survival and hospitalization in patients with ischemic chronic heart failure (CHF).

Methods: A total of 154 patients with ischemic symptomatic moderate-to-severe CHF were enrolled in the study at discharge from the hospital. Observation period was up to 3 years (156 weeks). Blood samples for biomarkers measurements were collected at baseline prior to study entry. ELISA methods for measurements of circulating level of osteonectin (OSN) were used.

Results: During a median follow-up of 2.18 years, 21 participants died and 106 subjects were hospitalized repetitively. Medians of circulating levels of OSN in survival and died patient cohort were 670.96 ng/mL (95% confidence interval [CI] = 636.53-705.35 ng/mL) and 907.84 ng/mL (95% CI = 878.02-937.60 ng/mL). In the logistic regression analysis, the main factors independently related with cumulative mortality and CHF-related rehospitalizations were some biomarkers (OSN alone, NT-pro-BNP alone), LVEF, T2DM, and three- and multi-vessel lesion. Receiver Operation Characteristic analysis has shown that cut off point of OSN concentration for cumulative survival function was 845.15 ng/mL. It has been found a significantly divergence of Kaplan-Meier survival curves in

patients with high (> 845.15 ng/mL) and low (< 845.15 ng/mL) concentrations of OSN. Circulating OSN independently predicted all-cause mortality (OR = 1.23; 95% CI = 1.10–1.36; $P < 0.001$), CHF-related death (OR = 1.46; 95% CI 1.22–1.80; $P < 0.001$), and also CHF-related rehospitalisation (OR = 1.92; 95% CI = 1.77–2.45; $P < 0.001$) within 3 year of observation period.

Conclusion: Increased circulating SPARC family member OSN associates with increased 3-year CHF-related death, all-cause mortality, and risk for recurrent hospitalization due to CHF.

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Is there relationship between frailty and health related quality of life (hrqol) in elderly patients with heart failure (hf) and what role does anxiety and depression play?

I Uchmanowicz¹ and RJJ Gobbens²

¹Health Science Faculty Wroclaw Medical Univeristy, Wroclaw, Poland
²Rotterdam University of Applied Sciences, Research and Development Center Innovations in Care, Rotterdam, Netherlands

Background: Elderly people constitute over 80% of the population of Heart Failure (HF) patients. Frailty Syndrome (FS) is a distinct biological syndrome reflecting decreased physiologic reserve and resistance to stressors. Frailty occurs more frequently among patients with HF than among the general population, and serves as an independent predictor of visits to the emergency department, hospitalizations, and mortality. Co-morbid depression and anxiety are associated with increased mortality and healthcare utilisation and have an impact on the quality of life.

Therefore the purpose of this paper was to assess the relationship between frailty, anxiety, depression, and Health Related Quality of Life (HRQoL) of elderly patients with HF.

Methods: The study included 100 patients with HF. Frailty was measured using the Tilburg Frailty Indicator (TFI) scale. HRQoL was measured using the Medical Outcomes Study 36-item Short-Form Survey (SF-36). To determine the prevalence of anxiety and depression we used the Hospital Anxiety and Depression Scale (HADS).

Results: The study included 100 patients (53 men and 47 women). Frailty was found in 89% of studied population. The average results of TFI in the group with FS were 8.4 ± 2.4 vs. non-frail: 3.2 ± 0.9 (< 0.001). The average value of HADS - anxiety in the group with FS was 9.5 ± 4.5 . non-frail: 3.9 ± 3.3 ($p < 0.001$). The average value of the HADS-depression in the group with FS was 8.8 ± 4.9 and non-frail: 3.4 ± 2.8 ($p < 0.001$). The study showed significant

inverse correlations between the values of the PCS domain and TFI ($r = -0.66$, $p < 0.001$). Significantly inverse correlation between values of MCS domain and TFI ($r = -0.68$, $p < 0.001$). Our analysis have showed significantly positive correlations between the TFI scores and HADS-anxiety results ($r = 0.60$, $p < 0.001$), and HADS-depression results ($r = 0.66$, $p < 0.001$). We have also showed significantly inverse correlation between PCS domain values, HADS-anxiety ($r = -0.51$), and HADS-depression ($r = -0.61$, $p < 0.001$). Also we have noticed significantly inverse correlation between MCS domain, HADS-anxiety ($r = -0.59$) and HADS-depression ($r = -0.74$, $p < 0.001$).

Conclusion: Frailty has a negative impact on HRQoL results in elderly patients with HF. In addition patients with frailty may more likely develop anxiety and depression. Assessment of frailty should be taken into consideration while estimating risk and making therapeutic decisions for cardiovascular disease treatment and care.

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Predicting quality of life with cardiac biomarkers: first results from MOLITOR

E Tahirovic,¹ HD Duengen,¹ V Tscholl,¹ T Trippel,¹ G Loncar,² S Radenovic,¹ S Apostolovic,³ B Pieske,¹ ML Chavanon⁴ and C Herrmann-Lingen⁴

¹Charite - Campus Virchow-Klinikum (CVK), Berlin, Germany ²Zvezdara University Medical Center, Cardiology Department, Belgrade, Serbia ³Clinical Center of Nis, Cardiology, Nis, Serbia ⁴Georg-August University, Department of Psychosomatic Medicine and Psychotherapy, Göttingen, Germany

Objective: Disease progression in acute and decompensated chronic heart failure (ADHF) reflects disorders in neurohormonal systems. It was shown that certain biomarkers could help improve the diagnosis and prognosis of different cardiological diseases. In a pilot study, we aimed at determining the best time point for measuring biomarkers to predict primary clinical outcomes of mortality and rehospitalization and quality of life (QoL). A first inspection revealed that serial measurements of the precursor peptides of the natriuretic and vasopressin systems (NT-proBNP and copeptin, respectively) add incremental value to risk stratification in patients. The present analyses focus on relevance of those data for QoL.

Method: MOLITOR is the first observational trial to explore biomarker levels in patients with ADHF (NYHA III-IV). Out of 168 patients, who were followed for 2 years, 113 were available for statistical analyses. Their NT-proBNP and copeptin levels were used as predictors for physical and psychosocial aspects of QoL (short-form health survey, SF36). Hierarchical multiple linear regression analyses were used to investigate whether log₁₀ transformed NT-proBNP and copeptin at baseline,

discharge, 3 months post hospitalization predicted psychological and physical functioning at follow-up above socio-demographic data (age, marital status, education), additional treatment with benzodiazepines or antidepressants and NYHA-classification at discharge. We further evaluated whether those effects of NT-proBNP on QoL are due to its anxiolytic impact (assessed with the Hospital Anxiety and Depression).

Results: Although copeptin levels were highly predictive for survival, they did not have any incremental value for QoL (all $ps > .13$). In contrast, NT-proBNP levels 3-months after discharge significantly predicted psychosocial ($\beta = -.25$, $p < .015$,) and physical ($\beta = -.28$, $ps < .05$) QoL at follow up:

Higher levels of NT-proBNP were associated with worse QoL. It should be noted that elevated NT-proBNP at admission predicted reduced HADS-anxiety at discharge, $\beta = -.16$, $p < .05$, but not QoL at discharge or follow up.

Conclusion: First results showed that NT-proBNP levels measured at different time points may differentially predict QoL, especially the physical component and anxiety. It is already known that higher levels of NT-proBNP at baseline hospitalization predict less anxiety at discharge, whereas NTproBNP 3-months after discharge predict worse physical QoL but doesn't associate to anxiety. Current analyses now probe whether ongoing cardiovascular medication can affect NT-proBNP, QoL and anxiety.

Oral abstract session II

Sunday 14 June 2015 - 15:30 - 17:00

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European cardiovascular nurses and allied professions practical skills regarding cardiopulmonary resuscitation

T Pettersen,¹ J Maartensson,² AB Axelsson,³ M Jorgensen,⁴ A Stromberg,⁵ DR Thompson⁶ and TM Norekval¹

¹Haukeland Universityhospital, Department of Heart Disease, Bergen, Norway ²School of Health Sciences, Jonkoping, Sweden ³Sahlgrenska Academy, Gothenburg, Sweden ⁴Stavanger University Hospital, Stavanger, Norway ⁵Linkoping University, Linkoping, Sweden ⁶Australian Catholic University, Melbourne, Australia

Purpose: High quality cardiopulmonary resuscitation (CPR) remains a cornerstone in the initial treatment of cardiac arrest, and is directly linked to survival rates following cardiac arrest. Nurses are often first responders, and it is therefore paramount that they are skilled in the performance of CPR. As it is generally accepted that CPR skills deteriorate rapidly following training, the purpose of this study was to investigate if there was a correlation between participants' CPR training and their practical CPR test results.

Methods: This comparative study was conducted on two separate occasions: at the 2008 Spring Meeting on Cardiovascular Nursing in Malmö (N = 85), and at the 2014 EuroHeartCare meeting in Stavanger (N = 113). All participants were asked to perform CPR, both chest compressions and ventilations, for 3 consecutive minutes using a Laerdal Resusci Anne SkillReporter manikin. The test was performed individually in an open space at the conference. A questionnaire was employed comprising demographics and questions concerning participants' level of CPR training and last training occasion. The study was based on the International Guidelines 2005 (ILCOR) in Malmö, and the European Resuscitation Council Guidelines for Resuscitation 2010 in Stavanger.

Results: Study participants conducting CPR training more often than once a year, performed better in relation to existing guidelines regarding ventilation volume than those who trained less often (853 ml vs 864 ml vs 1111 ml, $p = 0.001$). Furthermore, those who had CPR training offered at their work place also performed better in relation to existing guidelines regarding ventilation volume (889 ml vs 1081 ml, $p = 0.003$) and compression rate per minute (100 vs 91, $p = 0.04$) than those who had not. Comparisons of participants in 2008 and 2014 showed a significant difference in average ventilation volume (985 ml vs 870 ml, $p = 0.03$), average compression rate per minute (80 vs 113, $p < 0.001$) and average compression depth (46 mm vs 53 mm, $p < 0.001$).

Conclusion: Our study indicates that there is a positive correlation between frequency of CPR training and whether or not CPR training was offered in the workplace with participants' performance on the practical CPR test regarding ventilation volume and compression rate. Large ventilation volumes during CPR were the most common error in both groups. Significant differences regarding compression rate and depth between the two measuring points may be due to adherence of different guidelines in 2008 and 2014, as resuscitation guidelines were revised in 2010.

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Implementation of mobile health application for patients with congenital heart disease: the Heart Compass app

C Thomet,¹ K Khattab,² HJ Kowal,³ K Wustmann¹ and M Schwerzmann¹

¹Bern University Hospital, Center for Congenital Heart Disease, Bern, Switzerland ²Bern University Hospital, Department of Cardiology, Bern, Switzerland ³University of Bern, ARTORG Center for Engineering Research, Bern, Switzerland

Introduction: Congenital heart disease (CHD) is the most common inborn defect with a prevalence of 0.8%. It is often subdivided into mild, moderate or severe defects. Particularly patients with moderate or severe defects risk repeated surgical and interventional treatments and often need to adjust their lifestyle. Studies have shown that CHD patients often struggle with putting medical recommendation into daily practice. Furthermore, many know little about their heart defect. In case of an emergency, providing adequate medical information can be crucial. The widespread use of smartphones provides a unique opportunity to make patient data accessible when needed. We have therefore created a mobile health application that is able to host individualized CHD-related information in a consumer-friendly way, and will support patient self-care management. This is a report of our initial experience with this application.

Methods: The Heart Compass app has been implemented in 2013. The application system consists of 2 major components: 1) a web interface to allow the health care provider in charge to create a patient record and to upload medical data on a smartphone, and 2) a mobile device application that connects with the server and allows every patient to download his or her patient record. The patient record contains five different pages: general information (e.g. health insurance, personal information), emergency data (e.g. address and phone number of the family doctor or the cardiologist), CHD-related data (e.g. exact diagnosis, interventions, picture of the heart defect), additional medical data (e.g. current medication, endocarditis-card if

necessary) and additional attachments (e.g. latest medical report, ECG, x-ray).

Results: From March 2014 to May 2014, 45 patients with CHD were informed about the new application during their routine consultation at the CHD clinic. Out of these 45 patients, 44 (m = 30, w = 14) downloaded the new Heart Compass app. The patients were between 17 and 41 years old. 15 patients had a severe, 18 a moderate and 11 a mild heart defect. Reasons for the download were: a scheduled trip abroad, increased risk of accidents for professional reasons or during sport, or the wish to have a security backup. All feedback from patients regarding the utility of the app was positive. 6 patients had login problems, and 4 times, the app needed to be reinstalled.

Conclusions: The first impressions and feedbacks are positive and promising. The app seems to meet the patient's needs, independent of their age or the complexity of their CHD.

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An exploratory prospective cohort study investigating readmission, symptom attribution and psychological health following PPCI

H Iles-Smith,¹ L Mcgowan,² M Campbell,¹ C Mercer³ and C Deaton⁴

¹University of Manchester, Manchester, United Kingdom ²University of Leeds, Faculty of Medicine and Health, Leeds, United Kingdom ³Central Manchester University Hospitals NHS Foundation Trust, Manchester, United Kingdom

⁴University of Cambridge, Department of Medicine, Cambridge, United Kingdom

Background and objectives: Following ST-elevation myocardial infarction (STEMI) and treatment with primary percutaneous coronary intervention (PPCI), some patients are readmitted with potential ischaemic heart disease (pIHD) symptoms. Symptoms may be due to cardiac ischaemia, reduced psychological health or comorbid conditions, all sharing similar symptoms. This study investigated the proportion of PPCI patients readmitted due to pIHD symptoms within 6 months of STEMI, and explored the associated factors.

Methods and results: In an exploratory prospective cohort study, data were collected using the Seattle Angina Questionnaire (SAQ) and the Hospital and Anxiety and Depression Scale (HADS) at baseline and six months, and the Global Registry of Acute Coronary Events score (GRACE) and the Charlson Comorbidity Index (CCI) at baseline. Readmission data were collected using patient records and telephone interview at six months.

202 PPCI patients returned baseline questionnaires [mean 59.7 yrs (standard deviation 13.9), 75.7% male], 38 (18.8%; 95% confidence interval 14.0% to 24.8%) of whom were readmitted due to pIHD symptoms within six months (16

(42.1%) due to a cardiac event and 22 (57.9%) without a diagnosis). At baseline and six months, mean HADS anxiety scores were higher for the readmission compared to the non-readmission group (baseline 9.5 vs 7.1, $p = 0.006$; 6 months 9.4 versus 6.0, $p < 0.001$). Angina symptoms were stable and infrequent throughout for groups at both time points. In logistic regression modelling of readmission from HADS anxiety, SAQ angina stability, SAQ angina frequency, GRACE scores and CCI, HADS anxiety was a significant predictor with an adjusted odds ratio of 1.12 (95% confidence interval 1.03 to 1.22, $p = 0.008$).

Conclusion: Elevated levels of anxiety at baseline were predictive of readmission with pIHD symptoms at six months following STEMI. These findings suggest that psychological distress leads to patients seeking help when symptoms occur. Adaptations to PPCI aftercare services including psychological intervention and additional education related to symptom attribution may be required for this group of patients.

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Acute coronary syndrome in a postpartum patient with Hellp Syndrome

E G Laws,¹ M Mariani,¹ U Paradosi,¹ R Marrai,² G Casilla,² C Angiolini,² S Baldassari,¹ S Luciani,¹ J Giannetti¹ and S Baratta¹

¹Gabriele Monasterio Foundation CNR/Region Toscana, Heart Hospital, Massa, Italy ²Azienda USL1 Massa Carrara, Maternità Infantile, Massa, Italy

Background: Peripartum cardiomyopathy is a type of dilated cardiomyopathy, which occurs in previously healthy women in the final month of pregnancy and up to 5 months after delivery. The incidence is low (< 0.1%), morbidity and mortality rates high at 5% to 32%.

Clinical case: A 32 year old primigravida was referred to our institute 2 hours after caesarian section for twin delivery with a hypertensive crisis (180/120) and signs of left ventricular overload on her ECG. Echocardiography showed a pericardial effusion with severe mitral insufficiency, hypokinesia of the inferior septum and base wall, elevated troponin levels.

Clinical management: Intravenous nitrates were commenced. Due to a low platelet count it was decided to perform a CT coronary angiogram which showed no significant occlusions. Neurological symptoms then began resulting in tonic/clonic convulsions, she was intubated and transferred to the intensive care unit. (neurological investigations were negative) The patient was extubated after 12 hours. Ventricular dysfunction (EF 40%) was treated with intravenous Levosimendan then oral heart failure medication. The ECG and echo gradually improved, discharge EF 55%. A cardiac magnetic resonance suggested a stress associated cardiomyopathy. (?Inverted Takotsubo)

Organizational management: This case involved a strong collaboration between 2 hospitals, various departments and professional disciplines. It was decided to transfer the patient post ICU to our pediatric cardiac ward as staff were used to dealing with post partum patients in collaboration with the obstetric nurses, cardiologist follow up was by the adult team.

Social and Psychological Aspects: The patient was not clinically stable enough to be transferred to the maternity unit. Her babies were brought to her room to enhance bonding and give reassurance. Her partner and own mother were allowed to stay. The twins were bottle and breast fed. She will need counseling explaining the high risk for future pregnancies.

Discharge: The patient was discharged on 10th day post partum. At follow ups she and the twins are doing well.

Conclusion: The literature shows a correlation between pre-eclampsia and an important increased cardiac risk. A recently published article concludes that early post partum could present a new vulnerable group at increased risk for stress-induced cardiomyopathy (TTS) The cardiac symptoms took attention away from the eclampsia which could have had serious consequences. We need to increase awareness of these problems with our obstetric colleagues in order to improve care and patient education.

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Ethnic and sex differences in acute coronary syndrome presentation: Early results from the esACS study

K King-Shier,¹ H Quan,¹ NA Khan,² M Kapral³ and R Tsuyuki⁴

¹University of Calgary, Calgary, Canada ²University of British Columbia, Vancouver, Canada ³University of Toronto, Toronto, Canada ⁴University of Alberta, Edmonton, Canada

Purpose: The classic presentation of acute coronary syndrome (ACS) symptoms is well documented in males of European descent. However, patient populations are markedly more diverse. There is some evidence to suggest that ethnicity and sex may lead to variation in ACS symptoms. We thus aimed to systematically evaluate potential ethnic and sex differences in the symptom presentation of Caucasian (European White; CA), Chinese (CH), and South Asian (SA) ACS patients.

Methods: A cross-sectional survey will be completed with 1827 adult CA, CH, and SA ACS patients, admitted to one of 14 Canadian hospitals. The survey (also translated into Cantonese, Mandarin, Punjabi, Tamil, Urdu, Hindi and Gujarati) includes questions identifying the location, type, nature, and intensity of admission symptoms.

Results: Interim analysis of 860 ACS patients (482 CA, 284 SA, and 94 CH) suggests that there may be some

important ethnic and sex differences in symptom presentation. CA patients reported more nausea ($p = 0.50$) and dizziness/weakness ($p = 0.039$) than SA or CH patients. CA females were more likely than males to report nausea ($p = 0.045$) and dizziness/weakness ($p = 0.001$). SA females were more likely to report nausea ($p < 0.001$), shortness of breath ($p < 0.001$), and dizziness/weakness ($p = 0.013$) than males. SA patients reported more shooting/moving pain ($p = 0.046$) and stabbing sensation ($p = 0.031$) than CA or CH patients, while CA patients reported more pressure sensations ($p < 0.001$). CA males were more likely than CA females to report burning ($p = 0.006$), while CA females were more likely to report pressure ($p = 0.013$). CH females were more likely to report pressure ($p = 0.039$) than CH males. The subjective intensity of the main symptom was lower in CH ($p = 0.045$) than CA or SA patients, though SA females reported higher scores than SA males ($p = 0.019$). Finally, CA patients were more likely than SA and CH to report a distinct time of symptom onset ($p < 0.001$) and this may vary between CH males and females ($p = 0.054$).

Conclusion: These early data suggest there are some important ethnic and sex differences in ACS symptom presentation. Having atypical ACS symptoms can lead to delay in seeking medical attention, receipt of less aggressive clinical management, and worse in-hospital mortality. Thus, findings from this study will be relevant to potential ACS patients living in the community as well as their healthcare providers.

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Tolerability to beta-blockers and mortality in acute heart failure

LCP Passos,¹ T Trindade,¹ PG Figueredo,² GJB Filho,² MGG Oliveira,³ RB Fernandes,⁴ NMC Aguiar,⁴ SG Marins,² CK Leiria² and A Rabelo Junior²

¹Federal University of Bahia, Medicine and Health Post Degree Program, Salvador, Brazil ²Cardiology Foundation of Bahia, Salvador, Brazil ³Federal University of Bahia, Multidisciplinary Health Institute, Vitória da Conquista, Brazil ⁴Federal University of Bahia, Faculty of Medicine, Salvador, Brazil

Aim: To evaluate whether intolerance to beta-blockers (BB) during hospitalization is associated with higher hospital mortality due to acute heart failure (AHF) as well as factors associated with intolerance.

Methods: We conducted a retrospective cohort study using data for 202 patients with a left ventricular ejection fraction (LVEF) $\leq 45\%$ admitted for AHF in two tertiary treatment centres between July 2009 and June 2013. Tolerability was assessed in each individual through observation of maintenance or discontinuation of BB use due to related adverse events.

Results: We evaluated 202 patients with LVEF $\leq 45\%$. On admission, 60% (120) of the patients used BB during hospitalization, 83% (165) of the patients used BB at some

point in the clinical course and at discharge, and 77% (142) of the patients were currently using BBs. Table 1 shows the differences between patients according to tolerability.

Conclusion: In this study, 23% of patients hospitalized for AHF did not tolerate BBs and this was associated

with higher hospital mortality. Chronic renal failure and vasoactive amine release were associated with intolerance. These findings suggest that patients who do not tolerate BB should be regarded as being at higher risk and therefore considered for alternative strategies.

Table 1. General characteristics of the sample

	BB tolerable	BB intolerance	P/ χ^2	OR (95% CI)
Male	62% (88)	58.3% (28)	–	0.68 (0.32-1.46)
Age (years)	62.0 \pm 12.0 (22-93)	63.0 \pm 14.0 (24-90)	–	–
Systolic blood pressure (mmHg)	124.0 \pm 29	116.0 \pm 23	–	–
Hypertension	73.5% (100)	60.4% (29)	0.09 (2.9)	0.55 (0.27-1.10)
Atrial fibrillation	29.1% (34)	34.1% (14)	0.54	1.27 (0.59-2.70)
Diabetes	27.2% (37)	27.1% (13)	0.001	0.99 (0.47-2.08)
Chronic kidney disease	16.2% (22)	31.3% (15)	0.03 (5.0)	2.35 (1.09-5.05)
Length of stay (days)	11.0 (6-17.5)	16.0 (6.25-29.5)	0.035*	–
Acute renal failure	36.9% (52)	37.5% (18)	0.94 (0.06)	1.02 (0.52-2.02)
Vasoactive amine release	14.1% (20)	27.1% (13)	0.04 (4.2)	2.27 (1.03-5)
Death	0.7% (1)	21.1% (12)	0.001 (27.4)	37.3 (4.72-333)

Data are expressed as frequency (n) for categorical variables and mean \pm standard deviation or median and interquartile range for continuous variables. * Mann-Whitney test. BB, beta blockers; OR, odds ratio; CI, confidence interval.

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Competing and challenging risks in acute coronary syndrome

EV Maclagan¹

¹Sunnybrook Health Sciences Centre, Schulich Heart Centre, Toronto, Canada

According to the World Health Organization (WHO) cardiovascular diseases are the leading cause of death globally. In Canada, heart disease and stroke remain the second and third leading causes of death. The age-standardized mortality rates for cardiovascular disease have shown a promising declining trend for the past ten years. Despite the promising trend, cardiovascular disease remains a significant health care concern for health care practitioners, clients, and their families. Similar to other countries in Europe and North America, Canada's elderly population is rapidly increasing. Elderly patients often have complex cardiovascular disease and other competing comorbidities that require effective medical and interdisciplinary management.

A 78 year old man presented with intermittent retrosternal chest pain over the 3-4 days prior to his admission to a tertiary health sciences centre in Canada. The patient's prior medical history included dyslipidemia (untreated), peripheral vascular disease, renal insufficiency and treated hypertension. The patient was married and had recently retired

from running a small business. On presentation patient's vital signs were stable, an electrocardiogram indicated fluctuating ST depression and laboratory investigations indicated an elevated cardiac troponin. The patient was admitted for acute coronary syndrome and he was treated with standard pharmacotherapy. The patient developed an acute gastrointestinal bleed, with a significant decrease in hemoglobin, not requiring transfusion. Gastroscopy identified a small ulcer, and he was started on a proton pump infusion. The coronary angiogram was postponed due to the instability of the patient's bleeding, and one antiplatelet was temporarily held and then resumed. Patient's vital signs remained stable and he had no further chest pain, although he developed a sudden onset of confusion, fluctuating dysarthria, and right sided weakness. A CT scan of his head, indicated a left main cerebral artery infarct with no bleed. CT angiogram of head and neck identified a near occlusion of the left internal carotid artery with good collateral blood supply. Patient stabilized and had a coronary angiogram that identified multivessel coronary disease, a bare metal stent was inserted into the circumflex artery. Patient required rehabilitation and he was discharged mobilizing with assistance, and mild dysarthria. This case study can be informative for nurses and allied health care professionals in the management of an acute coronary syndrome with additional complexity of gastrointestinal bleeding and a cerebrovascular event.

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Management of a patient presenting to the emergency department with acute coronary syndrome.D Mcguone¹ and G McMahan¹¹St James Hospital, Emergency/Chest Pain Assessment Unit, Dublin, Ireland

Introduction: Chest pain is one of the most common reasons for patients presenting to Emergency Department (ED). An Integrated pathway for management of patients with Acute Coronary Syndrome (ACS) was established at the authors workplace. All patients presenting to ED with chest pain of possible cardiac origin are considered for admission to the Chest Pain Assessment Unit (CPAU).

A 32 year old female presented to the ED complaining of acute chest pain, with increased frequency over a two week period, associated with Shortness of breath, dizziness and bilateral arm pain. Each episode lasted approximately five minutes, with severity on pain scale of 10/10.

Patient had multiple similar episodes over the past year and had been reassured by her GP it was secondary to her diagnosis of Guillain –Barry Syndrome (GBS) and anxiety.

Past Medical History :GBS, GORD, Hiatus Hernia, Anxiety.

ED Assessment

A focused clinical assessment was completed by the ED/ Cardiology Clinical Nurse Specialist (CNS) and Consultant. No exclusion factors were identified so the

CPAU documentation was completed and the patient was transferred to the unit with no further delay. Patient was loaded with 300MG aspirin. Admission Troponin was normal as was the ECG.

CPAU Assessment

Continuous ST segment monitoring for signs of ACS was recorded along with troponin levels at admission, 6 hour and 12 hours.

Resting Phase Assessment

Significant ST segment changes was noted on the monitors overnight. ECG showed Inferior ST Elevation. Cardiology Registrar contacted. Patient complained of chest tightness similar to previous episodes she had believed to be panic attacks. Patient proceeded to diagnostic angiography for PCI to RCA.

Problems and possible differential diagnosis

Approximately one third of patients who present with ACS do not present with classic type chest discomfort. Biochemical markers may be initially negative as in this case. Non diagnostic ECG's are recorded in 55% of patients attending ED's who ultimately have ST elevation. Internationally 4%- 12% of MI's are discharged in error from ED.

Conclusion and Implications for clinical practice

The patient returned to the CPAU clinic after 48hours for symptom review, repeat troponin and a discussion regarding risk modification. The guidelines for ACS and a structured assessment were adhered to. It is pivotal that these guidelines are implemented internationally so mortality rates are reduced.

Poster Session I Sunday 14 June 2015 - 08:30 - 17:00

Heart Failure

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Received knowledge of heart failure patients undergoing cardiac resynchronisation therapy implantation

B Ingadottir,¹ I Thylen² and T Jaarsma¹

¹Linköping University, Department of Social and Welfare Studies, Linköping, Sweden ²Department of Cardiology and Department of Medical and Health Sciences, Linköping University, Linköping, Sweden

Purpose: Cardiac resynchronisation therapy (CRT) is a fast growing and successful treatment for heart failure patients and patient education is an important part of their care.

The purpose of this study was to describe what knowledge heart failure patients undergoing CRT implantation perceive they received during the perioperative period and assess factors related to received knowledge.

Methods: Patients (n = 96, 79% male, mean age 70 years \pm 9.7) scheduled for a first time, elective implantation of a CRT device in six Swedish and Icelandic hospitals answered a survey 2 weeks after the procedure. Data were collected on their received knowledge, access to knowledge and satisfaction with care. The Received Knowledge of hospital patients scales (RKhp) is a 40 item instrument with six subscales: Biophysiological, functional, experiential, ethical, social and financial knowledge with scores 1 (= low received knowledge) to 4 (= high received knowledge). The 8-item Access to Knowledge scale and the 11-item Patient Satisfaction Scale have scores 1 (= low access/satisfaction) to 4 (= high access/satisfaction). Data on the relationship between received knowledge and background factors was analysed with non-parametric tests.

Results: Patients received most knowledge on biophysiological issues (Mdn 3.3 IQR 0.88) followed by functional, (Mdn 2.3 IQR 1.38), ethical (Mdn 2.2, IQR 1.50), social (Mdn 1.8 IQR 1.25), experiential (Mdn 1.7 IQR 1.67) and financial (Mdn 1.0 IQR 1.33) issues. In total 90% of patients reported acceptable access to knowledge provided by healthcare professionals except for the item on family involvement in care (49% agreed). In total 90% of patients were satisfied with their care except for how nurses prepared their family for discharge (68% satisfied). Received knowledge was positively correlated with both access to knowledge ($r = 0.36$, $p < 0.001$) and satisfaction with care ($r = 0.22$, $p < 0.05$), usability of information ($r = 0.32$, $p < 0.01$) and perceived support from healthcare providers ($r = 0.28$, $p < 0.05$).

Conclusions: Heart failure patients receive most knowledge on physical issues in connection with their CRT

procedure and much less on other important issues. A significant number of patients perceive that family involvement in care is not optimal. Healthcare providers may support patient empowerment and satisfaction by providing them and their family with knowledge which meets their individual needs thus making the care more person centred.

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Depressive symptoms as a moderator and mediator of the relationship between physical activity, appetite and perceived health among patients with heart failure.

C Andraea,¹ A Stromberg,¹ M L Chung,² T A Lennie² and K Arestedt¹

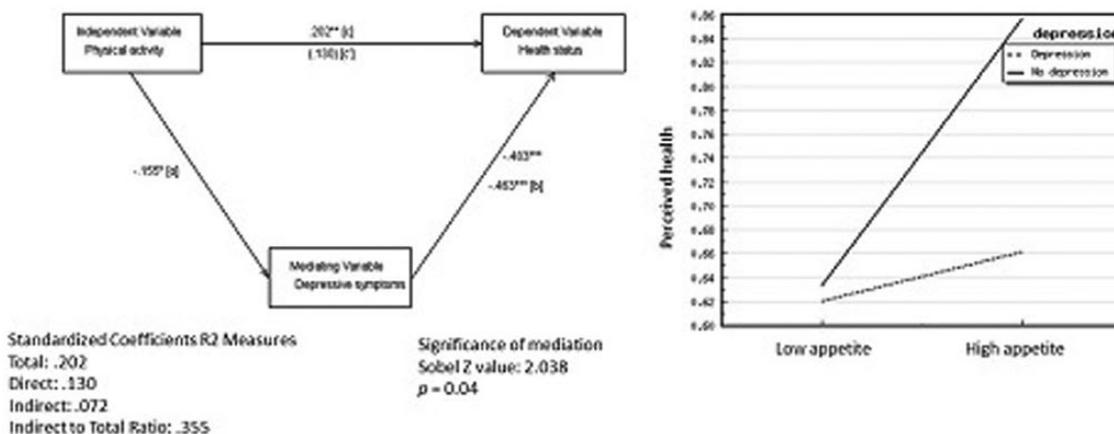
¹Department of Medical and Health Sciences, Linköping, Sweden ²University of Kentucky, College of Nursing, Lexington, United States of America

Purpose: Depressive symptoms have been shown to directly influence perceived health among persons with heart failure (HF). Decreased physical activity and appetite may also be predictive of poor perceived health. The purposes of this study were to determine whether appetite and physical activity predicted perceived health, and to determine whether depressive symptoms mediated or moderated their relationship with perceived health.

Methods: A total of 184 patients with mild to severe HF were included. Appetite, depressive symptoms and perceived health were measured by self-report questionnaires (Council on Nutrition Appetite Questionnaire, Patient Health Questionnaire and EuroQol 5D index). Physical activity was measured by SenceWearTM for 6 days. A separate series of multiple linear regression analyses were run to determine whether depressive symptoms mediated or moderated the relationship between physical activity and perceived health, and between appetite and perceived health.

Results: Higher physical activity predicted better perceived health ($\beta = 0.202$, $p = .006$) but the strength of the association decreased ($\beta = 0.13$, $p = .048$) when depressive symptoms were included in the model. There was a significant mediation effect for depressive symptoms on perceived health (sobel = 2.03, $p = .041$) (Fig 1). Appetite was a significant predictor of perceived health. Examination of this association among those with and without depressive symptoms, however showed positive association between appetite and perceived health remained only for patients without depressive symptoms demonstrating a moderating effect ($p < .001$) (Fig 2).

Conclusion: Identifying and treating depression simultaneously while addressing appetite and physical activity may be key to improving perceived health among persons with HF.



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The cognitive, supportive and behaviour needs of participants in a nurse-led intervention targeting patients with heart failure and their partners

M Liljeroos,¹ S Agren,¹ T Jaarsma² and A Stromberg¹

¹Linköping University, Department of Medical and Health Sciences, Division of Nursing Science, Linköping, Sweden ²Linköping University, Department of Social and Welfare Studies, Linköping, Sweden

Purpose: To describe the cognitive, supportive and behaviour needs and goals of patients with heart failure (HF) and their partners participating in a nurse-led psychoeducational intervention.

Methods: The nurse led intervention consisted of three sessions including psychosocial support to maintain and strengthen the patients' and partners' physical and mental functions and perceived control over the HF as well as the patients' self-care. Each session was performed as a semi-structured conversation focusing on the situation of both patient and the partner, their individual and mutual needs and expectations. The data consisted of the written documentation in the dialogue guides used by nurses during the sessions when delivering the intervention to the patient-partner dyad. In the dialogue guide the nurses documented summaries of the discussion, agreements and described difficulties during each of the three sessions. Qualitative content analysis was used for analyzing the dialogue guides.

Results: This preliminary analysis is based on the content of the dialogue guides completed during the intervention including 3 sessions with 71 patients with HF and their co-habiting partners. Mean age for the patients was 69.4 (± 13.6) years and partners 67.1 (± 12.1) years, 69% of the patients were male and 55% were in NYHA-class III.

Five categories were identified. The first category named "Knowledge to manage decision-making in HF in everyday life" describes the patient-partner dyads expectations on the sessions where both expressed a wish for knowledge about HF as they experience difficulties in managing HF self-care.

The second category named "Support to be empowered" describes patients wish to manage the self-care and not burden their partners, but sometimes doubting their own skills and the effect of self-care activities. When seeing effect of actions taken the confidence to perform self-care activities increased. The third category "Dealing with altered roles in the relations", describes changes in the relation which has arisen due to the disease.

The fourth category "Partners have to be flexible and supportive" describes that partners give both practical and emotional support, but also encourage patients to take own responsibility. The fifth category "Facilitate partners' need of support" describes partners' worry and wish for long-term support from health care to ease the caregiver burden.

Conclusion: The result describe the importance for long-term support for both patients and partners and can guide the design when planning new psychoeducational interventions for patient-partner dyads affected by HF.

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Patient-nurse communication about prognosis and end-of-life care

A-L Hjelmfors,¹ M HL Van Der Wal,² M Friedrichsen,² J Martensson,³ A Stromberg³ and T Jaarsma²

¹Linköping University, Department of Medical and Health Sciences, Linköping, Sweden ²Linköping University, Department of Social and Welfare Studies, Linköping, Sweden ³Jonkoping University, School of Health Sciences, Jonkoping, Sweden

Purpose: To explore how often and why nurses discuss prognosis and end-of-life care with heart failure patients within the context of patient education in 2 European countries.

Methods: A descriptive registration survey was performed in November 2012 and January 2013 and included 279 nurses from 81 Swedish and 91 Dutch HF clinics. The nurses' reasons for discussing prognosis and end-of-life care or not discussing this with the patients

were collected by open-ended questions and analysed with content analysis.

Results: In total, the nurses registered 1 809 patient conversations with their HF patients (mean age 71±12, 88% in NYHA II-III, 62% male). Prognosis and end-of-life care were together with sexual activity the least often discussed topics and symptoms and signs of HF the most often discussed topic. Prognosis was discussed with 687 of the patients (38%) and end-of-life care with 179 of the patients (10%). For those 1099 patients (61%) with whom prognosis was not discussed, nurses reported that it could be relevant to discuss this in the future in 70% of the patients. Similarly, for the 1585 patients (90%) in whom end-of-life care was not discussed, nurses reported that it could be relevant to discuss the topic later on in 72% of the patients.

The nurses did not always recognise prognosis and end-of-life care discussions as a part of their role as a nurse, indicating these discussions could be beyond their responsibility. If the patients themselves initiated the discussion, they nurses would answer in order to meet the patients' needs.

Conclusion: Patient-nurse communication about prognosis and end-of-life care is scarce within HF care in Sweden and the Netherlands. Future research should further explore and test interventions for better patient-nurse communication about prognosis and end-of-life care. The results from this study can be used as a first step toward that goal.

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Nurses experiences of using the Liverpool Care Pathway care plan in hospitalized patients dying from heart failure; a qualitative study.

R Hove,¹ NF Faalun² and BF Fridlund³

¹Førde District Hospital, Department of Heart Disease, Førde, Norway

²Haukeland University Hospital, Department of Heart Disease, Bergen,

Norway ³Jonkoping University, School of Health Sciences, Jonkoping, Sweden

Purpose: Heart failure is a serious condition with high burden of symptoms and a major cause of mortality. The intention of palliative care is to improve the care of the dying patients where Liverpool Care Pathway (LCP) is one terminal care plan. There is little evidence in patients suffering from heart failure and their needs in end-of-life care according to terminal care plans. Therefore, the purpose of the study was to explore and describe nurses' experiences of using the LCP care plan in hospitalized patients suffering from heart failure.

Methods: An explorative and descriptive design based on qualitative content analysis was carried out, comprising 20 interviews with nurses practicing the care plan. All nurses had a minimum experience of three patients with heart failure on the LCP care plan. The interviews were conducted in two district hospitals in Norway.

Findings: The emerging theme revealed LCP to be helpful to assure both quality of treatment and nursing care in the last stage of life in patients suffering from heart failure. Sub-categories were abstracted to three categories: i) individualized adjustment, ii) symptom relief and iii) holistic approach. These categories were abstracted into the theme: LCP as quality assurance for treatment and nursing for patients with heart failure in the last hours and days of life.

Conclusion: Nurses experienced that using the LCP as a comprehensive action plan contributed in the decision making process and improved interdisciplinary communication. Using the LCP must be seen as a tool to practice individualized and holistic nursing to patients in the last phase of life, as well as a purposeful relief of symptoms associated with heart failure.

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Quality of life assessment in recognition of clinical deterioration in heart failure

G H Gundersen,¹ T M Norekval,² H H Haug,¹ L T Gustad,¹ K Skjetne,¹ J O Kleinau,¹ T Graven¹ and H Dalen³

¹Levanger Hospital, Levanger, Norway ²Haukeland University, Department of Heart Disease, Bergen, Norway ³Norwegian University of Science and Technology, MI Lab, Department of circulation and medical imaging, Trondheim, Norway

Purpose: Pleural effusion (PLE) is associated with decompensated heart failure (HF). However, it is challenging for patients and clinicians to recognize worsening of HF at an early stage. Research on QOL assessment as a tool in recognizing clinical deterioration of HF is scarce. Therefore, the aims of this study were to i) assess QOL in HF patients with and without PLE, and to ii) determine the association between QOL, PLE, and change of amount of PLE during follow-up.

Methods: Patients admitted to the HF outpatient clinic at a non-university hospital between April 15th and Jun 21st 2013 were included. Focused ultrasound by miniaturized scanners of the pleural cavities at baseline and every visit during follow-up was performed by two specialized nurses. The patients were categorized in four groups according to the amount of PLE, graded as 1) not present, 2) only in the costodiaphragmatic angle, 3) dimension of fluid between the diaphragm and basal lung < 30 mm and 4) dimension ≥30 mm. Grade 3 and 4 were classified as significant amounts. QOL was assessed by the Minnesota Living with Heart Failure questionnaire (MLHFQ) before entering the study and at the last follow-up visit. Student's t-test was used to compare QOL between groups and in linear regression analyses the associations of PLE with QOL was assessed.

Results: In total 62 (of 62 screened) patients were included. At baseline 26 (42%) patients had PLE of whom 19

(31% of the total) patients had significant amounts of PLE (grade 3 and 4). Patients with PLE grade 1 and 2 had a better MLHFQ score (mean 43, SD 20) compared to patients with a larger amount of effusion (mean 55, SD 23), $p = 0.04$. Twenty-seven patients had the last follow-up visit in the study period where they answered the second MLHFQ. At follow-up, QOL had improved with mean (SD) 8 (23) versus 36 (21) for patients with baseline PLE grade 1 and 2 versus 3 and 4, respectively. The difference between groups was highly significant, $p = 0.01$. In regression analyses QOL score was improved with $B = 3.5$, 95% CI by bootstrapping was 0.6-18 units per cm decrease of PLE, $p = 0.09$.

Conclusion: This novel small scale study indicates that QOL assessment is a sensitive and valuable tool in recognising clinical deterioration in HF. Patients with significant amounts of PLE reported worse QOL than patients with minimal or absent PLE. At follow up, the improvement in QOL was higher among those with the largest amounts of PLE at baseline. Larger reduction in PLE correlated with a larger improvement in QOL. However, further studies investigating the role of patient self-report is required.

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The impact of frailty status on self-reported health and quality of life in octogenarians with severe symptomatic aortic stenosis prior to aortic valve implantation

A Frantzen,¹ B Fridlund,² L Eide,³ R Haaverstad,¹ KJ Kuiper,¹ A Ranhoff³ and TM Norekval¹

¹Haukeland University Hospital, Department of Heart Disease, Bergen, Norway ²School of Health Sciences, Jönköping University, Jönköping, Sweden ³Department of Clinical Science, University of Bergen, Bergen, Norway

Purpose: Frailty is associated with reduced self-reported health (SRH) and quality of life (QOL) among the elderly >80 years. The aim of the study was to determine pre-operative frailty status, SRH and QOL in patients with severe symptomatic aortic stenosis (AS) shortly prior to transcatheter aortic valve implantation (TAVI) or surgical aortic valve replacement (SAVR).

Methods: In this observational prospective cohort study, information on SRH and QOL was obtained one day prior to TAVI or SAVR using the Minnesota Living with Heart Failure Questionnaire (MLHFQ), the Short Form-12 (SF-12) and two items from the WHOQOL-BREF. Frailty status was assessed using the Study of Osteoporotic Fracture (SOF) Frailty Index; patients were categorized as robust, pre-frail or frail. EuroScore was used to determine risk and Charlson Comorbidity Index to measure comorbidity. The one-way ANOVA and Bonferroni statistical tests were used to compare mean between groups.

Results: In all, 143 patients were included, mean age 83 years (SD 2.7). Thirty-four percent were robust, 27%

pre-frail and 39% frail. Frail patients were in a higher New York Heart Association (NYHA) function class ($p < .028$), had more often left ventricular ejection fraction (EF) $< 50\%$ ($p < .030$) and higher S-ProBNP ($p < .036$). No significant differences were detected in EuroScore ($p < .070$), Charlson Comorbidity Index ($p < .123$) or in aortic valve area ($p < .776$). Frail patients reported lower SRH and QOL compared to both pre-frail and robust patients: MLHFQ physical score 22.3 (9.8) vs. 16.6 (8.6) and 13.6 (9.3) ($p < .001$), emotional score; 8 vs. 3 and 2.5 ($p < .001$), SF-12 physical component score (PCS) 31.6 (9.9) vs. 33.1 (9.3) and 37.4 (11.4) ($p < .029$), SF-12 mental component score (MCS) 44.5 vs. 51.5 and 53.4 ($p < .001$), and WHOQOL-BREF general QOL 4.0 vs. 4.0 and 4.0 ($p < .041$).

Conclusion: Frailty is associated with reduced SRH and QOL in patients >80 years with symptomatic AS. Further research is required to determine if frailty can predict SRH and QOL after TAVI or SAVR and to render an explanation as to why some patients do not benefit from treatment in terms of improved SRH and QOL.

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Percutaneous Mitral Valvuloplasty With Balt Single Balloon. Long-term Follow-up Of 25 Years.

I P Borges,¹ ECS Peixoto,² RTS Peixoto,³ RTS Peixoto⁴ and VF Marcolla¹

¹Rio de Janeiro State Government, Rio de Janeiro, Brazil ²Fluminense Federal University, Rio de Janeiro, Brazil ³Polícia Militar do Rio de Janeiro, Rio de Janeiro, Brazil ⁴Aloysio de Castro State Institute of Cardiology, Rio de Janeiro, Brazil

Objective: To evaluate the long-term follow-up (FU) of mitral balloon valvuloplasty (MBV) with Balt single balloon (BSB) technique and to determine independent predictors of survival and event-free survival (EFS).

Methods: From 1987 to 12-31-2013, 526 procedures of MBV were performed, 404 (77.1%) with BSB. There were 256 procedures with long-term FU. The balloon diameter was 25 mm in 5 procedures and 30 mm in 251, mean dilatation area was 7.02 ± 0.30 cm². The FU was 54.6 ± 32.8 (1 to 174) months. It was used the multivariate Cox analysis to determine IPS and EFS.

Results: Mean age was 38.0 ± 12.6 (13 to 83) years, 222 (86.7%) female gender, 215 (84.0%) in sinus rhythm, echo score (ES) 7.2 ± 1.5 (4 to 14) points and echo mitral valve area (MVA) pre-MBV 0.93 ± 0.21 cm². Mean pre and post-MVA (Gorlin) were 0.90 ± 0.20 and 2.02 ± 0.37 cm², respectively ($p < .001$). There were success (MVA ≥ 1.5 cm²) in 241 (94.1%) procedures. Mean pulmonary artery pressure pre and post-MBV were 27 ± 10 and 20 ± 7 mmHg, respectively. Three (1.2%) patients began the FU with severe mitral regurgitation (SMR). At the end of FU 119 (46.5%) patients were in NYHA functional class (FC), I I, 70 (27.3%) in FC II, 53 (20.7%) in FC III, 3 (1.2%) in FC IV and there were 11

(4.3%) deaths. At the end of the FU there were: 17 (8.2%) patients with SMR; 20 (4.7%) were submitted to a new MBV; 27 (10.5%) to mitral valve surgery and 70 (26.3%) without any medicine. Independent predictors of survival were: ES ≤ 8 points ($p < 0.001$, HR 0.116, 95% IC 0.035-0.384), age ≤ 50 years old ($p = 0.011$, HR 0.203, 95% IC 0.059-0.693) and absence of mitral valve surgery in the FU ($p = 0.004$, HR 0.170, 95% IC 0.050-0.571). Independents of EFS were: absence of prior commissurotomy ($p < 0.002$, HR 0.318, 95% IC 0.151-0.667), female gender ($p = 0.036$, HR 0.466, 95% IC 0.229-0.951) and MVA post-MBV ≥ 1.50 cm² ($p < 0.001$, HR 0.466, 95% IC 4.884-28.457).

Conclusion: It was observed 94% of procedure success (MVA ≥ 1.5 cm²). At the end of follow-up (25 years) only 4.3% of mortality. The independent predictors of survival were: ES ≤ 8 points, age ≤ 50 years old and absence of mitral valve surgery in the FU. Independent predictors of EFS were: absence of prior commissurotomy, female gender and MVA post-MBV ≥ 1.50 cm².

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Independent country and gender differences in quality of life after beta-blocker up-titration in German and Serbian patients: analysis from the CIBIS-ELD trial

HD Duengen,¹ E Tahirovic,¹ C Zelenak,¹ T Trippel,¹ M Fritschka,¹ V Celic,² S Apostolovic,³ B Pieske,¹ ML Chavanon⁴ and C Herrmann-Lingen⁴

¹Charite - Campus Virchow-Klinikum (CVK), Berlin, Germany ²University Clinical Hospital Center "Dr Dragisa Misovic-Dedinje", Cardiology Department; Faculty of Medicine, University of Belgrade, Belgrade, Serbia ³Clinical Center of Nis, Cardiology, Nis, Serbia ⁴Georg-August University, Department of Psychosomatic Medicine and Psychotherapy, Göttingen, Germany

Objective: It is known that quality of life (QoL) depends on patient's emotional and social status, traits of treatment setting, medication and clinical factors during treatment. Since the effect of cultural aspects on QoL hasn't been fully explored so far, we decided to analyze the data from CIBIS-ELD in which QoL for Serbian (S) and German (G) patients with heart failure (HF) were available. Clinical improvement due to beta-blocker up-titration was excluded.

Methods: CIBIS-ELD is a phase III trial in elderly patients (>65 y) with moderate to severe HF, who were randomly assigned to up-titration with bisoprolol vs. carvedilol. The physical and psychosocial component scores on the short-form health survey (SF36) were recorded at baseline and after 3 months (final visit). Besides, the design factors (Sex, Nation and Time), all analyses accounted for age and clinical parameters such as NYHA class (NYHA I-II vs. NYHA III-IV) at baseline, objective physical performance in the 6-min walk test, LVEF, initial medication and final dosage of study medi-

cation at follow-up (0, $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, $>\frac{1}{2}$ of the targeted dose). Complete data were available for 136 G (67 f) and 426 S (117 f). We ruled out QoL differences due to unplanned study visits, by controlling their number and its interaction with NYHA class and nation.

Results: Physical and mental QoL differed between men and women, $F > 6.6$, $ps < .01$: Men reported better QoL. When comparing the effect of Nation for QoL, S reported better physical QoL. Concerning treatment effects, both QoL scores improved from baseline to follow up, effect sizes $d > .17$, $ps < .001$. This treatment response was moderated by nation for both mental ($F = 7.22$, $ps < .001$) and physical QoL ($p = .087$): S showed a more pronounced response on physical and mental QoL (S $d = 0.3-0.34$ vs. G $d = 0.07-0.12$). A closer look revealed that cultural differences in treatment response were strongest for the facets that are supposedly less affected by beta-blocker treatment. Treatment effects associated to NYHA class were only observed on physical QoL, $F = 9.38$, $p = .002$. For patients in NYHA classes III-IV the treatment resulted in a larger improvement of physical QoL than for NYHA I-II and their physical QoL did not differ from that of patients with less severe HF at follow-up, $p > .10$.

Conclusion: Careful analysis showed that Serbian patients had a stronger positive response to treatment. This effect might be because of differences in health care systems or cultural aspects related to the perception of interpersonal factors as nation effects were more pronounced on the psychosocial than on the physical QoL facet.

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Preliminary results of the study MEETinCY Cyprus University of Technology's state funded budget 2008 e 2011 [Startup Fund EX2007 (04)]

E Lambrinou,¹ N Christoforou,² F Kalogirou,¹ E Papatheooglou,¹ P Avraamides³ and N Middleton¹

¹Nursing Department, Cyprus University of Technology, Limassol, Cyprus ²Limassol General Hospital, Coronary Care Unit, Limassol, Cyprus ³Limassol General Hospital, Cardiology Department, Limassol, Cyprus

Background: Even though heart failure (HF) management programmes have been improved and proved their efficient, no such programme has been offered until recently in Cyprus. Since 2008 MEETinCY research programme is the first one in Cyprus and it is also a nurse-led management programme for HF patients in Cyprus.

Purpose: To determine the effect of a structured educational intervention and / or telephone follow-up programme for patients with HF.

Methods: The present study is a randomized control trial with various interventions and longitudinal monitoring. As a part of the larger MEETinCY research project, sampling was extracted from the parent sample, which was conducted

between April 2014 and June 2014, using the electronic medical records of patients of five government hospitals. Total acute events of HF decompensation including their clinical and demographic characteristics were recorded in 12 and 24 weeks post discharge. Additional information to support the existence or not of decompensation, if needed, was provided by patients and their relatives, through telephone calls. Events were classified as decompensation of pre-existing HF, or decompensation from other causes.

Results: A number of 195 Cypriot HF patients, who received educational intervention and / or telephone follow up calls, were recruited. A reduction of instant risk of HF decompensation at 3 months in 51% [HR: 0,49 (95CI: 0,27-0,88) ($p = 0,001$), was found in the group of telephone follow up, compared to control group. There was no difference between groups regarding the occurrence of death [Control $n = 1$ (1,8%) vs Intervention $n = 2$ (2,2%) $p = 1$], the total visits to emergency department ($p = 0,52$), the total readmissions ($p = 0,52$), and the cumulative events (visits & readmissions) ($p = 0,79$). No statistically significant difference was found in the mean hospital length of stay [Control $6,17 \pm 8,2$ vs Intervention $6,54 \pm 9,5$ ($p = 0,874$)]. Unfortunately, the promising results of the beneficial effect of the intervention in disease-free survival time for the first 3 months after randomization and perspective monitoring, does not appear to be maintained for long.

Conclusions: The present study results showed that advanced nurses in HF who apply structured educational programmes combined with telephone follow up, can enhance the outcome of patients with HF.

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Use of seattle heart failure score and ADHERE-HF score for mortality estimation risk in chilean patients admitted due to decompensate heart failure

F Diaz,¹ H Verdejo,² P Castro² and V Rossel³

¹Catholic University Clinical Hospital, Santiago, Chile ²Pontifical Catholic University of Chile, Faculty of Medicine, Santiago, Chile ³University of Chile, Santiago, Chile

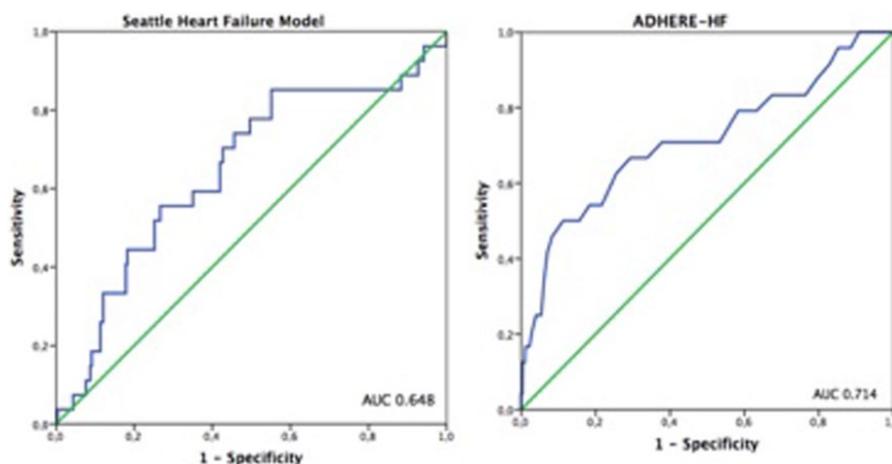
Heart failure (HF) guidelines suggest the use of risk stratification tools to assess mortality risk in order to optimize therapeutic effort and to rationalize the use of high-cost therapies.

Aim: To assess the validity of the the ADHERE-HF score (AHS) for intrahospital mortality and the Seattle Heart Failure Model (SHFM) for long-term mortality in Chilean HF patients

Method: Descriptive analytic study. We included patients admitted to Chilean hospitals between 2002-2012 due to decompensate HF. Mortality was assessed by querying the database of the Chilean Office of Vital Statistics. AHS considered age, history of COPD, BUN, plasma sodium, blood pressure and heart rate at admittance. SHFM score included age, gender, functional class, left ventricular ejection fraction, systolic blood pressure at discharge, re-synchronization therapy, plasma sodium, uric acid and hemoglobin at discharge and current medication. Predicted and observed mortality was compared using Harrell's C for SHFM and Hosmer-Lemeshow for AHS. Validity was assessed by ROC curves.

Results: We included 1584 patients, 45.3% female, age $70,5 \pm 20$ y. Intrahospital mortality was 2,5% and 1-year mortality was 13.5%. AHS correlated with in-hospital mortality (lower quartile mortality 1.1% vs. upper quartile mortality 5.1%, $p = 0,002$ for trend). SHFM identified correctly high risk patients (1-year mortality (lower quartile mortality 5.5% vs. upper quartile mortality 19.5%, $p = 0,03$ for trend). However, sensitivity and specificity for both instruments was suboptimal. (Fig.1)

Conclusion: Both AHS and SHFM are useful for stratifying mortality risk in poblational analysis. However, its relatively low sensitivity and specificity preclude its use for individual risk assessment, emphasizing the need of locally validated scores.



Survival Curve.

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Gamma glutamyl transferase ; a novel prognostic marker for systolic heart failure

G Tekin,¹ S Altay¹ and A Gurcagan¹¹Edirne Devlet Hastanesi, cardiology, Edirne, Turkey

In clinical practise , serum gamma glutamyl transferase (GGT) is measured as a marker of excessive alcohol consumption or of hepatic disease . Serum GGT activity has been shown to be related to the development of atherosclerosis and cardiovascular events . These associations of GGT with adverse sequelae were independent of alcohol consumption . Limited data indicate that GGT concentrations are higher in patients with prevalent heart failure . We evaluated the association of serum GGT concentrations with increased mortality and morbidity risk in patients with heart failure.

83 patients with left ventricular systolic dysfunction (EF < 45%) were evaluated by echocardiography and laboratory tests. Their heart failure etiologies were ischemic heart disease (53), non-ischemic heart disease (11) and unknown causes (19) . Serum GGT activity is measured in plasma by spectrophotometry. The study population was divided into tertiles on the basis of admission GGT values. The mean follow-up time was 6 months . In analysis of study, a significant association was founded between high GGT levels and adjusted risk of cardiovascular mortality (p = 0.007). When combined endpoint for re-hospitalization (due to decompensated heart failure or need of revascularization) and death were analysed within all laboratory tests , GGT levels were statistically significant p = 0.031).

Serum GGT analysis is inexpensive and easily accessible test . It might not only be elevated in heart failure patients but could also be associated with the severity of heart failure and adverse prognosis. Prevalence of elevated GGT is high in patients with chronic heart failure. Increased GGT is independent predictor of death in patients with heart failure. GGT elevation seems to be largely a reflection of overall disease burden. GGT is becoming an important addition to the multimarker approach to cardiovascular risk evaluation. It should be considered a valuable adjunct in stratifying patient risk and in assessing appropriate treatment with hopes of preventing deaths in future years.

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Earlier integration of palliative care support is needed in advanced heart failure to support caregivers

L Doherty,¹ S Mcilpatrick¹ and D Fitzsimons¹¹University of Ulster, Belfast, United Kingdom

Purpose: The important contribution of palliative care for non-malignant conditions, such as heart failure is increasingly recognised. Despite this, evidence suggests that end-of-life care in heart failure is poor, with only 4% of this population receiving palliative care services. Caregivers play a pivotal role in facilitating the care for people living with heart failure, yet the specific needs of this group has received little attention. This systematic narrative review aims to explore the evidence on palliative care needs of carers of people living with advanced heart failure.

Methods: Five electronic databases (CINAHL PLUS, EMBASE, Medline, PsychInfo and SCOPUS) were systematically searched and articles published January 2003 to June 2014, with a qualitative methodology focusing on the palliative care needs of carers of people living with heart failure were included.

Results: Data was systematically extracted from fifteen articles using an inductive methodology for the thematic analysis. Ten broad categories emerged from which three key areas of support needs were identified; psychosocial support to empower a sense of normalcy; self-sacrifice; support navigating the healthcare system. Six of the included articles were conducted in the UK and six in the US while one each was carried out in Sweden, the Netherlands and Canada. The total sample size across all articles was two hundred and seventy, the majority of which were older female spouses. Results included a combination of carers, patients and professionals thoughts, albeit data was extracted for carers only.

Conclusion: Carer's needs initiate when the patient is diagnosed and continue throughout the disease into bereavement. Needs are continuously prioritised and reprioritised depending on the patients' medical stability. A holistic approach is needed to support these carers, incorporating heart failure and palliative care specialties. Further research is warranted to explore different methods of delivering information and to evaluate whether these reduce carer burden.

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The effectiveness of individualized approach to the development of more precisely physical rehabilitation program - a pilot study

T Lelyavina,¹ MYU Sitnikova¹ and EV Shlyakhto¹¹Almazov Federal Center of Heart Blood & Endocrinology, Saint Petersburg, Russian Federation

Objective: to estimate efficiency of individualized approach to the development of more precisely physical rehabilitation program in HF pts.

Methods: We evaluated 35 HF pts, age 53+/-1.8, 25 men, NYHA class III, LVEF 40,8+/-0,3%. CPET was

performed on a treadmill ("Oxycon Pro" (Jaeger, Germany)) initially and after 6 months. Oxygen uptake at lactate threshold (VO₂LT), pH-threshold (VO₂pH-T) and VO₂peak were measured. The cubital venous catheter was installed before CPET. Blood samples were taken at baseline and at 1-minute intervals during test. pH and lactate- were estimated using analyzer i-STAT, cartridge CG4 (Abbot, USA). 35 pts were divided into two groups: 25 patients of study group (SG), who underwent physical rehabilitation program (PRP), calculated based on individualized approach of exercise physiological stages; and 10 HF patients control group (CG), who performed usual PRP. HF patients in both groups were matched in age, sex, LVEF and BMI. Results: Of the 35 pts initially included, at different times before the 18 weeks 7 pts dropped out of the study: 2 - from the SG and 5 - from the CG. Causes for exclusion of pts from the study were: unwillingness to continue training (4 patients), hospitalization for reasons not related to HF (2 pts), hospitalization associated with decompensation of chronic heart failure, which was caused by the development of respiratory viral disease (1 pt).

Results: At the study beginning CPET results: VO₂LT, VO₂pH-T and VO₂peak were similar in SG and CG, 8.7 of+/- 0.5, 11.0+/-0.8, 13.5+/-0.9 ml/min/kg and 8.9 +/- 0.9, 11.5+/-1.3, 13.6+/-1.2 ml/min/kg, (pVO₂LTSG-CG = 0,08, pVO₂pH-TSG-CG = 0,07, pVO₂peakSG-CG = 0,09). After 6 months VO₂LT, VO₂pH-T and VO₂peak were better in SG than in CG: 10.1 of+/- 0.6, 12.8+/-0.5, 16.7+/-1.1 ml/min/kg and 9.3 +/- 1.0, 12.1+/-1.1, 14.6+/-1.2 ml/min/kg, (pVO₂LTSG-CG<0,01, pVO₂pH-TSG-CG<0,05, pVO₂peak SG-CG<0,01). The ergoreflex activity initially did not significantly differ in patients in the two study groups. After conducting a long-term aerobic training in patients of the SG recorded a more marked reduction in the ergoreflex activity: the level of DBP, it was 35% and 20%, VE - 48% and 25%, VE/VCO₂ - 39% and 12%, in the SG and CG, respectively. 4 pts of the SG after 32 weeks of aerobic exercises increase VO₂ was so significant that has reached 85-90% of the maximum predicted values, which is a normal value.

Conclusion: Aerobic exercise, designed with individualized method increase exercise tolerance, reduces the severity of CHF and the activity of ergoreflex more than aerobic training, calculated in the usual way.

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Significant differential metabolic effects of simvastatin combined with ezetimibe and simvastatin alone in patients with hypercholesterolemia

K Koh¹¹Gachon University, Incheon, Republic of Korea

Background: Ezetimibe demonstrates to improve insulin sensitivity and to decrease fat in the liver. Simvastatin dose-dependently worsens insulin sensitivity. However, the effects of simvastatin combined with ezetimibe have not been investigated on insulin sensitivity, visceral fat, and blood pressure in patients with hypercholesterolemia, compared with simvastatin alone.

Methods: This was a randomized, single-blind, placebo-controlled, parallel study. Age, sex, and body mass index were matched among groups. Fifty-one in each group were given placebo, ezetimibe 10 mg combined with simvastatin 10 mg (Vyto10), ld> Placebo therapy did not significantly change insulin and insulin sensitivity (determined by QUICKI) and adiponectin levels and visceral fat and visceral fat/subcutaneous fat (V/S fat) ratio relative to baseline measurements. Vyto10 therapy significantly decreased insulin levels and increaseezetimibe 10 mg combined with simvastatin 20 mg (Vyto20), or simvastatin 20 mg alone (Sim20), daily for 2 months.

Results: Placebo therapy did not significantly change insulin and insulin sensitivity (determined by QUICKI) and adiponectin levels and visceral fat and visceral fat/subcutaneous fat (V/S fat) ratio relative to baseline measurements. Vyto10 therapy significantly decreased insulin levels and increased adiponectin levels and insulin sensitivity, and reduced visceral fat, V/S fat ratio, and blood pressure relative to baseline measurements. Vyto20 therapy did not significantly change insulin levels and insulin sensitivity and adiponectin levels but significantly reduced visceral fat, V/S fat ratio, and blood pressure relative to baseline measurements. Sim20 therapy significantly decreased adiponectin levels and insulin sensitivity but did not significantly change visceral fat, V/S fat ratio, and blood pressure relative to baseline measurements. Of note, these different effects of each therapy on insulin, adiponectin, insulin sensitivity, and blood pressure were significant by ANOVA.

Conclusion: Vyto10, Vyto20, and Sim20 showed significantly differential metabolic effects in patients with hypercholesterolemia.

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Percutaneous Mitral Valvuloplasty With Inoue versus Balt Single Balloon in mitral stenosis. Long-term Follow-up Of 25 Years.

I P Borges,¹ ECS Peixoto,² RTS Peixoto,³ RTS Peixoto⁴ and VF Marcolla¹¹Rio de Janeiro State Government, Rio de Janeiro, Brazil ²Fluminense Federal University, Rio de Janeiro, Brazil ³Polícia Militar do Rio de Janeiro, Rio de Janeiro, Brazil ⁴Aloysio de Castro State Institute of Cardiology, Rio de Janeiro, Brazil

Objective: This study aimed to demonstrate that mitral balloon valvuloplasty (MBV) with the Balt single balloon

(BSB) has similar outcome and long-term follow-up (FU) than MBV performed with the Inoue worldwide accepted technique.

Methods: From 1987 to 2013 a total of 526 procedures were performed, being 312 with a FU, 56 (17,9%) with Inoue balloon (IB) and 256 (82,1%) with BSB. The mean FU in IB group was 33±27 (2 to 118) and 55±33 (1 to 198) months, $p < 0.0001$. Univariate analysis (UA) and multivariate Cox analysis (MVA) were utilized to determine independent predict variables of survival and event free survival (EFS) in both techniques groups. The major events (ME) were death, cardiac surgery and new MBV.

Results: In IB and BSB groups there were, respectively: female 42 (75.0%) and 222 (86.7%); mean age 37.3±10.0 (19 to 63) and 38.0±12.6 (13 to 83) years, $p = 0.7138$; sinus rhythm 51 (91.1%) and 215 (84.0%), $p = 0.1754$; echo score (ES) 7.6±1.3 (5 to 10) and 7.2±1.5 (4 to 14) points, $p = 0.0528$; echo mitral valve area (MVA) pre-MBV 0.96±0.18 and 0.93±0.21 cm², $p = 0.2265$; post-MBV mean MVA (Gorlin) were 2.00±0.52 and 2.02±0.37 cm², $p = 0.9554$; MBV dilatation area 6,09 ± 0,27 and 7,02 ± 0,30, $p < 0,0001$. At the end of the FU, there were in IB and BSB groups, respectively: echo MVA 1.71±0.41 and 1.54±0.51 cm², $p = 0.0552$; new severe mitral regurgitation in 5 (8.9%) and 17 (6.6%) patients, $p = 0.5633$; new MBV in 1 (1.8%) and 13 (5.1%), $p = 0.4779$; mitral valve surgery in 3 (5.4%) and 27 (10.4%), $p = 0.3456$; deaths 2 (3.6%) and 11 (4.3%), $p = 1.000$; cardiac deaths 1 (1.8%) and 9 (3.5%), $p = 1.000$; ME 5 (8.9%) and 46 (18.0%), $p = 0.1449$. In UA and MCA the BSB or IB technique do not predict survival or EFS. The independent risk factors to survival (MCA with 2 models with 5 and 6 variables) were: age <50 years ($p = 0.016$, HR = 0.233, 95% IC 0.071-0.764), ES ≤ 8 ($p < 0.001$, HR = 0.105, 95% IC 0.34 – 0.327), MBV dilatation area ($p < 0.001$, HR 16.838, 95% IC 3.353 – 84.580) and no mitral valve surgery in the FU ($p = 0.001$, HR 0.152, 95% IC 0.050 – 0.459). Independent risk factors to EFS: no prior commissurotomy ($p = 0.012$, HR = 0.390, 95% IC 0.187 – 0.813) and post-MBV MVA ≥ 1.50 cm² ($p = 0.001$, HR = 7.969, 95% IC 3.413-18.608).

Conclusion: MBV with BSB and IB were equally efficient, there were similar survival and EFS in the FU. Independent predictors of survival were: age <50 years, ES ≤ 8 points, MBV dilatation area > 7 mm² and no mitral valve surgery in the FU. Independent risk factors of EFS were no prior commissurotomy and post-MBV MVA ≥ 1.50 cm²

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High protein diet for patients with heart failure

R Vestergaard,¹ A Lauberg¹ and B Schantz Lauersen²

¹Aalborg Universitet Hospital, Department of Cardiology, Aalborg, Denmark

²Aalborg University and Aalborg University Hospital, Clinical Institut and Clinical Nursing Research Unit, Aalborg, Denmark

Purpose: This project aims to investigate whether high protein diet can be used for weight loss in patients with heart failure. High BMI in patients with heart failure impairs physical condition.

Studies have shown that high protein diet gives the greatest weight loss in healthy individuals. Restricted exercise because of dyspnea and severe exhaustion is a problem that makes weight loss more difficult for patients with heart failure. The purpose of this study was to examine whether an outpatient weight loss program over a longer period was effective?

Methods: Six patients were followed for six months, every 14 days. Blood samples were taken once every month to monitor creatinin and urat levels because of the high protein intake, as well as cholesterol levels were followed every second month. Consultations (30 minutes) with focus on diet, lifestyle, and weight measuring (impedance weight) were conducted based on the patient's current life situation and was modified accordingly. Six minutes walk tests were recorded the first time, after three months, and at the last visit. Quality of life questionnaire (10 point VAS score) and EF(ejection fraction) was measured at the first (baseline) and last visit.

Results: The preliminary results show signs of weight loss, improvement of EF and walking distance, which was not only related to weight loss. A paradox was loss of muscle mass by decreased body weight in one patient even when protein intake was high. The consultations have been well received and evaluated as successful. Quality of Life questionnaire showed a continuous improvement in quality of life from baseline to finish.

Conclusion: Protein rich diet combined with outpatient conversations seems to have a good effect on weight loss in heart failure patients. Medicine and tendency to fluid retention lead to increased fatigue and affected motivation. Some patients are so complex that there was a need for additional guidance, because of other diseases or social conditions. Overeating due to motivational decline was also detected during the process which coincides with the normal population. Further studies should be undertaken to develop a suitable rehabilitation program for obese patients with heart failure.

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Differences in treatment intensity and outcomes of acute heart failure among the young and elderly

LCP Passos,¹ PG Figueredo,² T Trindade,³ GJB Filho,² MGG Oliveira,⁴ NMC Aguiar,¹ RB Fernandes,¹ SG Marins,² CK Leiria² and A Rabelo Jr²

¹Federal University of Bahia, Faculty of Medicine, Salvador, Brazil ²Cardiology Foundation of Bahia, Salvador, Brazil ³Federal University of Bahia, Medicine and Health Post Degree Program, Salvador, Brazil ⁴Federal University of Bahia, Multidisciplinary Health Institute, Vitória da Conquista, Brazil

Aim: To compare the treatment intensity and clinical outcomes of acute heart failure (AHF) between the young and elderly (≥ 65 years).

Methods: This retrospective cohort study included data on 494 patients admitted to two tertiary care centers for AHF between July 2009 and June 2013.

Results: The mean age of the elderly patients was 74.3 years. The frequencies of hypertension, atrial fibrillation, and chronic renal failure were higher among the elderly (Table 1). Ischemic heart disease was more common among

the elderly, whereas the frequencies of valve disease and Chagas heart disease were higher among the younger patients. The intensity of pharmacological treatment for AHF was similar in the two groups for angiotensin-converting-enzyme inhibitors, angiotensin receptor blockers, spironolactone, and intravenous furosemide, but not for beta blockers, which were less commonly used among the elderly. Hospital mortality was similar in the two groups.

Conclusion: Elderly patients hospitalized for AHF have access to the same intensity of pharmacological treatment as do younger patients in referral (teaching) hospitals, except for beta-blockers, the frequency of use of which was lower in the elderly. With modern treatments for AHF, age ≥ 65 years alone was not significantly associated with high mortality among the elderly.

Table 1. General characteristics and prognosis.

	Young	Elderly	P (χ^2)	Odds ratio (95% CI)
Male, % (n)	55.1 (125)	52.1 (139)	–	0.68 (0.32-1.46)
Mean Age \pm SD (range)	50.6 \pm 11.0 (20-64)	74.3 \pm 6.8 (65-93)	0.001	–
Hypertension, % (n)	63.4 (144)	87.3 (227)	0.001 (38.1)	3.97 (2.51-6.24)
Atrial fibrillation, % (n)	31.7 (65)	45.1 (97)	0.005 (7.96)	1.77 (1.19-2.64)
Diabetes, % (n)	26.4 (60)	24.6 (64)	0.677 (0.211)	0.91 (0.60-1.37)
Chronic renal failure, % (n)	9.8 (22)	43.8 (114)	0.001 (69.4)	7.2 (4.36-11.92)
Mean Length of stay (range)	14.0 (6.0-24.25)	8.0 (5.0-13.0)	0.001*	–
Acute renal failure, % (n)	34.4 (77)	28.4 (75)	0.17 (2.01)	0.76 (0.52-1.11)
Vasoactive amine use, % (n)	25.1 (57)	17.6 (47)	0.04 (4.2)	0.64 (0.41-0.98)
Death, % (n)	6.6 (15)	7.5 (20)	0.73 (0.14)	1.14 (0.57-2.28)

Data are expressed as frequency (n) for categorical variables and mean \pm standard deviation or median and interquartile range for continuous variables. * Mann-Whitney test. OR, odds ratio; CI, confidence interval; SD, standard deviation.

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Heart failure in patients with hypothyroidism

A Logvinenko¹

¹National Scientific Center "M.D. Strazhesko Institute of Cardiology of NAMS of Ukraine", Essential Hypertension, Kyiv, Ukraine

Objective: The combination of metabolic syndrome (MS) and expression hypothyroidism (ExH) progressively increases risk development of cardiovascular diseases and heart failure(HF).

Methods: 93 women with MS by ATP III are surveyed 2 gr.:1 gr.-46patients(53,2 \pm 3,6years) with MS and ExH(TSH 17,5 \pm 2,4 IU /ml, FT4 0,2 \pm 0,1ng/ml); 2gr.-47patients(54,2 \pm 4,3years) with MS and euthyroid (TSH2,4 \pm 1,0 IU/ml, FT4 0,9 \pm 0,1 ng/ml).Were determined: waist circumference (WC), body mass index (BMI), echocardiography, fast levels of glucose, insulin and lipids.The insulin resistance (IR) was diag-

nosed at increase of the HOMA-index $>$ 2,77 and HF of the myocardial dysfunction(MyD), left ventricular hypertrophy(LVH).

Results: patients of 2gr. had authentically smaller displays of abdominal obesity (WC 92,1 \pm 3,1sm) in comparison with 1gr. (WC 106,0 \pm 4,4sm), BMI in groups differ (29,3 \pm 1,1and 34,6 \pm 1,0 accordingly). In 2gr. has not been revealed changes of glucose (4,2 \pm 0,2 mmol/l) and HOMA-index in groups differ (2,2 \pm 0,4 and 4,6 \pm 0,4). Distinctive feature of 1gr. was higher of the total cholesterol (6,4 \pm 0,5 mmol/l) and LDL cholesterol (3,5 \pm 0,2 mmol/l). The patients of 1 gr. had increase the left ventricular mass index 135,9 \pm 4,4 g/m2 in comparison to the 2 gr. that testified to presence LVH. The patients of 1 gr. of more expressed myocardial dysfunction $<$ 45%.

Conclusions: manifestation of heart failure in patients with MS and ExH is accompanied by more expressed dyslipidemia of abdominal obesity and prevalence of LVH, MyD, in comparison with 2 gr.

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Left ventricular compliance index as a determining factor in evaluating right time to operate asymptomatic aortic stenosis

I Vranic,¹ I Vranic² and I Radosavljevic²¹University Clinical Center of Serbia, Clinic for cardiosurgery, Belgrade, Serbia²Specialized Hospital for Heart diseases Hertz, Belgrade, Serbia

Purpose: The absence of clinical trials concerning the effects of aortic valve replacement in patients with severe but asymptomatic aortic stenosis, expressed the need for perioperative monitoring of ECG changes before and after surgery in selected patients. Present literature data disqualify non invasive estimation by ECG in such sense, advocating ultrasound Doppler as a non invasive gold standard. Since exercise echocardiography is not always feasible in elderly population due to their difficult motility, the assumption we made was that end diastolic overload stands in direct correlation with reduced compliance of the left chamber.

Methods: Out of total number of 3081 AVR during the period of 13 years (Jan 2001-Dec 2013), 154 (5 %) were preoperatively asymptomatic while having positive echo

parameters of severe stenosis involving 98 male (63,6%) and 56 female(36,4%) patients, with a mean age of 66,5±8 years.

Doppler measured peak aortic jet velocity $\geq 2,6$ and $\leq 3,7$ m/sec.

AVA was $0,75 \pm 0,15$ cm² and EF LV $50\% \pm 7\%$. Mean frequency was 60 ± 6 . We measured the amplitude of S wave deflection in V1-V3 leads, as compared to normal subjects with normal aortic gradient. Subsequently, we measured the same ECG parameters during the follow up period of one year by regular check-ups on each 3 months.

Results: All studied patients showed reverse changes in S wave deflection in V1-V3 leads with return to normal after 9 months period. Presented findings reflected modifications in left ventricular overload after AVR and correlated well with echo parameters of normal flow gradients. Statistical analysis was done using Chi square, followed by Mc Nemar's test.

Conclusion: In non invasive manner, an asymptomatic aortic stenosis can be early recruited for AVR by measuring S wave deflection in V1-V3 leads on ECG, rather than with Cornell voltage duration. These results could yield software interpretation in future.

Table 1. (abstract 79)

	No Pts	AVA, cm ²	PG/MG, mmHg	Peak Ao velocity, m/s	EF LV%	S wave, mm (V1+V2+V3)/3
Asymptomatic AS	154	0,75 ± 0,15	55 ± 7 / 27 ± 2	3,7	50 ± 7	9 ± 0,2 *
Symptomatic AS	2927	0,8 ± 0,24	103 ± 5 / 58 ± 2	4,7	55 ± 8	10 ± 0,08 *
Healthy controls	150	1,8 ± 0,23	9 ± 2 / 3 ± 0,5	1,5	60 ± 5	2 ± 0,05 **

Legend: * p> 0,05, **p< 0,01

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Nursing care in a heart failure ECMO patient

J Sousa¹ and CS Baptista²¹Centro Hospitalar e Universitário de Coimbra, Heart Failure Intensive CareUnit, Coimbra, Portugal ²Centro Hospitalar do Baixo Vouga, Aveiro, Portugal

Heart Failure is a growing health problem around the world. Some hospital units already have a disease management program where patients receive counseling about the disease and how to avoid hospital admissions. However some patients with acute Heart Failure get admitted to hospital setting due to their critical condition, as they need to be monitored, get inotropic medication and in a severe critical situation need machine support, like mechanical ventilation or Extracorporeal membrane oxygenation (ECMO).

In Portugal this technique is not very often in HF patients, but it is used for patients with heart and pulmonary compromise.

At 1st July of 2013 a caucasian, conscious fifty year-old female patient was transferred, by air, from a portuguese hospital island, with tracheal cannula and plugged in to a mechanical ventilator, for heart transplantation. At the hospital of origin she had already had a cardiopulmonary arrest for ventricular fibrillation and doctors tried spontaneous breathing, not being successful. At admittance she had high doses of inotropic medication by hypotension and oliguria, and these doses have not stopped increasing, as her heart condition was very critical. At the 21st of July she had cardiogenic shock and ECMO was started. Only then drug doses started to decrease. Far from her family, a daughter follows her and stayed besides her mother as long as she could.

Using a new medical technique, we started questioning: what are the main nursing diagnoses? What can we offer to this patient for a better comfort?

With ECMO we understood that there was a big limitation, which was immobilization, as venous and arterial cannula were in the femoral artery and vein. Therefore,

using International Council of Nurses (ICN) language, diagnoses raised were: High dependency in all self-care; Risk of Pressure Ulcer; Risk of altered Tissue Perfusion; Risk of Infection (not only from blood, breathing or urinary but also from the local of ECMO insertion) and Risk of Bleeding. Not only these were the main nursing diagnoses but also we could not forget family involvement, through patient's daughter, who received daily information about her condition and religion beliefs. As a catholic her beliefs could not be forgotten and a priest was called as many times as she wanted, once she was awakened and conscious.

Heart transplantation was never possible for this patient and ECMO was never removed. With this case we established a structured plan where physical part was not forgotten, but most of all to provide spiritual and family support as at the end this patient died.

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25 years follow-up of percutaneous mitral balloon valvotomy. echocardiographic score influence, risk factors for death and major events.

I P Borges,¹ ECS Peixoto,² RTS Peixoto,³ RTS Peixoto⁴ and VF Marcolla¹

¹Rio de Janeiro State Government, Rio de Janeiro, Brazil ²Fluminense Federal University, Rio de Janeiro, Brazil ³Policia Militar do Rio de Janeiro, Rio de Janeiro, Brazil ⁴Aloysio de Castro State Institute of Cardiology, Rio de Janeiro, Brazil

Percutaneous mitral balloon valvotomy (PMBV) has emerged as an alternative to surgical treatment of mitral stenosis.

Objective: To identify the independent predictors of death and combined events (death, new mitral balloon valvotomy, or mitral valve surgery) in long-term follow-up of patients undergoing PMBV.

Methods: From 1987 to 2013 a total of 312 patients were followed-up 54.0±31.0 (1 to 126) months. The techniques were the single-balloon (84.4%), Inoue-balloon (13.8%), and double-balloon techniques (1.7%). The total group was divided in two: echocardiographic score >8 and ≤ 8 points groups. Multivariate Cox regression analysis were performed to identify independent risk factors of long-term survival and event free survival.

Results: The mean age were 38.0±12.6 years old (range, 13 to 83). Before the procedure, 84,42% patients had echo score ≤ 8, and 15.57% score > 8. Females comprised 85%, and 84% patients were in sinus rhythm. During follow-up, survival of the total group was 95.5%, echo score group ≤ 8 was 98.0% and echo score > 8 was 82.2% (p<0.0001), whereas combined event-free survival was 83.4%, 86.1%, and 68.9%, respectively (p 8 and

the presence of severe mitral valve regurgitation during the procedure. The predictors of combined events were a previous history of mitral valvular commissurotomy, atrial fibrillation, the presence of severe mitral valve regurgitation during the procedure and post procedure mitral valve area < 1.5 m².

Conclusion: PMBV is an effective procedure. Survival was high, even higher in the group with lower echocardiographic scores. Over 2/3 of the patients were event-free at the end of follow-up. Independent predictors of survival were pre procedure echo score ≤ 8 and the absence of severe mitral valve regurgitation during the procedure.

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Level of education and the ability to self-control among patients with heart failure.

B Serzysko,¹ I Sosnowska¹ and A Mlynarska²

¹Silesian Center for Heart Diseases, Zabrze, Poland ²Slaski Uniwersytet Medyczny w Katowicach, Katowice, Poland

As a part of a multidisciplinary ambulatory care, nursing educational activities for secondary prevention becomes necessary. The level of the effectiveness of therapeutic education can be measured by including knowledge of the patient. The aim of the study was to analyze health behavior and knowledge in the field of secondary prevention in patients with heart failure, depending on its duration.

Methods: The study included 69 patients (51M) with diagnosed heart failure. The study group was divided into 2 subgroups according to the time of participation in outpatient treatment: group I - up to 2 years of treatment - 22 patients; group II - more than 2 years - 47 patients. In all patients the anthropometric data, the knowledge and the principles of self-control were obtained. Those data were statistically analyzed.

Results: 15% of group I vs. 61% in group II (p = 0.02) assigns weight gain over 2 kg of intensification of heart failure. 43% of group I and 83% of group II (p = 0.19; NS) knows the recommended blood pressure. Daily body weight measurement is made by 24% of patients from group I vs. 42% group II (p = 0.38; NS). Drugs prescribed by a doctor accepts 75% of respondents from group I and 96% of group II (p = 0.5, NS). Contact the therapeutic team was found to be an important for more than 60% of respondents from group I and group II (p = 0.95, NS).

Conclusions: Patients staying longer in the ambulatory care show higher level of knowledge. Contact and cooperation of patients with heart failure team is an important part of the therapeutic treatment.

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Quality of life after heart transplantation

M Grubisic,¹ D Susnjari¹ and M Planinc¹

¹University Hospital Dubrava, Department of Cardiac and Transplant Surgery, Zagreb, Croatia

Purpose: In modern era with technology advances, new immunosuppressive drugs, better postoperative care and mechanical circulatory support, heart transplantation (HTx) remains the best surgical treatment option for patients with end-stage heart failure. After postoperative treatment and discharge the follow-up is done in out-patient clinic for HTx. After the operation these patients have new life situation with potential problems and questions to be answered. We researched what is quality of life after HTx and how patients adapt to new life situation.

Methods: In a University hospital between 1995 and 2014 117 patients underwent HTx. Early mortality was 14% (17 pts), and late mortality was 13% (13 pts). Two patients were lost from follow-up, and 85 are visiting out-patient clinic for HTx. Out of that number around 30 patients are followed-up in other institutions. This prospective study was designed to compare quality of life, life satisfaction and subjective ratings of health after HTx. Fifty patients were enrolled in this study.

Results: Average score of life quality in range from 1 – 10 was 7. Patient expectations after transplantation were scored with average score 6,3. The biggest problems represent the fear of rejection of the new organ, concern for the future, frequent infections, compliance of continuously taking therapy, incidence of secondary malignancy and the control of newly developed diabetes.

Conclusion: Quality of life parameters were significantly improved after successful heart transplantation with time needed to adapt to new drugs, follow-up and therapy management.

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Deactivation of an implantable cardioverter defibrillator; how do we decide?

LM Hill,^{1,2} SJ McIlpatrick,^{1,3} BJ Taylor,¹ L Dixon,² BR Cole,² D Fitzsimons,^{1,2,3}

¹University of Ulster, Jordanstown, United Kingdom ²Belfast Health and Social Care Trust, Belfast, United Kingdom ³All Ireland Institute of Hospice and Palliative Care, Belfast, Ireland

Purpose: Although cornerstone in the effective treatment of life-threatening arrhythmias, the therapeutic benefit of an Implantable Cardioverter Defibrillator (ICD) during the

last stage of any illness remains uncertain. European and International guidelines recommend professionals discuss deactivation with patients.

Aim of this study: To identify factors that impact on professional judgement regarding deactivation of an ICD at end-of-life.

Methods:

1: Systematic narrative review of 19 empirical studies (published 2008–2014) on patients' perceptions of deactivation.

2: Semi-structured interviews with patients (n = 9), carers (n-9) and focus groups with professionals (n-7).

3: Data were combined to identify and conceptualise factors which were incorporated into a web-linked professional factorial survey.

Results: Nine factors (in capitals) from three broad themes identified within the literature were validated by qualitative data. Most patients were male (gender), median AGE 64 years and lived with a family member (social support).

Preferences for the discussion and deactivation were diverse. Qualitative data showed that deactivation was often not discussed pre-implantation. Indeed many patients' were reluctant to engage in a discussion through-out their illness until "at death's door" (49 year female). Frequent shocks prompted patients to consider deactivation and was viewed by professionals as warranting discussion. Professionals mentioned the number of hospital admissions as a sign of clinical deterioration.

Ethical and legal considerations dominated Canadian and American literature in terms of clarifying treatment intent. Patients felt ill-equipped i.e. "No-one who is not medically trained has the right to make the decision for you" (60 year male).

Living in the now acknowledged the impact of advanced age, yet only a small number of octogenarians voiced that "they were done with life". Despite age and deteriorating symptoms (heart failure severity) with the majority of patients NYHA III – IV, they anticipated surviving more than 10 years. Data obtained from professionals supported this i.e. "the patient is a bit young so it would be difficult" (clinician). Many professionals felt that unless patients had a cancer diagnosis (Co-morbidity) they did not consider their prognosis and were less likely to engage in open discussions.

Conclusion: We identified 9 implicit factors which we postulate to affect professional decision-making about ICD deactivation at the end-of-life. The online survey is anonymous and if you care for ICD patients we encourage you to participate.

Education and behavioural aspects/ Health professional education

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Evaluation of an educational programme for family members of patients living with chronic heart failure

C Lofvenmark,¹ E Billing,² M Edner³ and A-C Mattiasson⁴¹Karolinska Institute, Danderyd Hospital, Department of Clinical Sciences, Stockholm, Sweden ²Department of Medical Sciences, Uppsala, Sweden³Karolinska Institute, Department of Medicine, Cardiology research unit, Stockholm, Sweden ⁴Karolinska Institute, Department of Neurobiology, Care Sciences and Society, Stockholm, Sweden

Purpose: To evaluate how family members of persons with chronic heart failure experienced a group-based multi-professional educational programme.

Methods: Sixty-five family members (female $n = 52$, mean age 64 years) of patients with chronic heart failure (CHF) were invited to participate in a multi-professional educational programme about CHF whereof 53 family members completed the programme. The participants met for six sessions during six months in groups of eight. The themes in the sessions included: medical aspects, self-care, nutrition, physical activities and psychological aspects. Family members who participated filled in a self-reported evaluation directly after completing the program. One year after the completed programme eleven family members (female $n = 10$, mean age 55 years) who participated at least in five of the six sessions were interviewed about their experience of the programme. The interviews were analysed by qualitative content analysis.

Results: The self-reported evaluation showed that most of the family members experienced the programme as a whole as excellent (53%) or good (39%). A majority (71%) would have preferred to share the education together with the ill person. Three categories were developed through the analysis of the interviews. The category "Making the disease comprehensible" deals with family members' increased knowledge about heart failure and thereby attaining a greater understanding of the ill person's situation. The category "Increasing involvement" deals with family members' self-confidence and that they became a resource for the ill person and their involvement in the ill person's self-care. The category "Positive changes in family members' own lives" comprises positive experience to meet others in the same situation and an insight into the importance of taking care of their own health.

Conclusion: The educational programme produced valuable knowledge and understanding for family members with respect to CHF. With the acquired knowledge the family

members felt they had the possibility to give appropriate support to the ill person, even one year after completion of the educational programme. Being part of a group with others in the same situation was a positive experience. A multi-disciplinary approach of the education of family members is important concerning that each of the professions has an important role to play in providing knowledge of the disease. Time and space for exchanging personal experiences with others in the same situation seems to be valuable to include in the structure of such a programme.

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Role of health education in the quality of life assessment of patients with heart failure

I Uchmanowicz,¹ B Jankowska-Polanska,¹ J Rosinczuk,¹ A Chudiak¹ and K Lomper¹¹Wroclaw Medical University, Department of Clinical Nursing, Wroclaw, Poland

Background: In the treatment of heart failure close cooperation of the patient and his family with the multidisciplinary team expected. One of the important elements in the therapy of heart failure is health education carried out by multidisciplinary team lead by a cardiac nurse. Properly and efficiently conducted education contributes to increased knowledge about the disease, compliance with treatment and improves patient's quality of life.

Purpose: To estimate the impact of health education carried out by an experienced nurse-educator on the quality of life of patients with heart failure.

Methods: The study included 100 patients with the diagnosis of heart failure. The analysis was performed in two groups. Group I ($n = 50$) consisted of patients included in the expanded program of health education (mean age 67.12 years), Group II ($n = 50$) patients who did not participate in the expanded program of education (mean age 65.4 years). Education was based on an individual interview with a patient (performed at least 3 times) and the main purpose was to prepare the patient for self-care. The study used a Polish version SF-36 questionnaire to assess quality of life.

Results: The compared groups differed significantly with respect to the severity of heart failure according to the NYHA scale (I0-5,1%, II0-40,8%, III0-48%, IV0-6,1%; $p < 0,05$). We obtained significant differences in the assessment of quality of life in study groups. Patients who undergone an expanded education program had significantly higher scores in most subdomains of the SF-36 questionnaire, except for the assessment of physical functioning (PF). There was a higher quality of life in patients undergoing health education in the Mental Summary Score (MCS: 55.72 SD = 3.52 vs 47.84, SD = 6.28; $p < 0.05$) and in the Physical Summary Score-PCS (PCS: 52.26 SD = 2.67 vs 46.57; SD = 4.5; $p < 0.05$).

Conclusion: The expended health education conducted by cardiac nurses among patients with heart failure improves the quality of life in this group of patients.

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Low-salt diet helps to normalize blood pressure variability

I Voloshyna,¹ VI Krivenko¹ and VG Deynega¹

¹Zaporozhye State Medical University, Zaporozhye, Ukraine

Increased blood pressure variability (BPV) is known predictor of targeted-organ damage. The aim was to establish a possible relationship between level of dietary salt consumption and BPV level in hypertensive patients.

Methods. Ninety four hypertensive patients (46 men, 48 women) aged 56±4,2 years were prospectively enrolled for this study. All patients gave written, informed consent. All subjects were suffered from moderate arterial hypertension with poor control of blood pressure and had increased systolic BPV (more than 18 mm Hg). By simple randomization, patients were divided into 2 groups. Patients of the first group were encouraged to keep low salt diet with strong recommendation no added salt in daily food. Patients of the second group were given advice to take their usual diet (daily salt level 3-5 gram). All patients were prescribed to take at least 2 antihypertensive drugs. The follow-up between visits was 3 months. Twenty-four hour blood pressure monitoring was performed to all patients on the first and second visits.

Results. After 3 months of observation in group of strictly low-salt diet the level of controlled hypertension was 91% as well as in group with usual diet only 53% patients had well-controlled blood pressure levels. Diurnal blood pressure variability had decreased in first group on 33%, on 15,7% - in second group (p<0,05).

Conclusion. Low salt-diet significantly enhances blood pressure control as well as normalize blood pressure variability parameters. It seems to be reasonable to recommend hypertensive patients not to add salt in daily food at all.

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The patients learning needs and the status of meeting these needs in patients who were undergone to the cardiovascular surgery

F Cebeci,¹ G Sucu Dag¹ and E Karazeybek¹

¹Akdeniz University, Antalya, Turkey

Aim: This study was made with the objective of determining the learning needs and the status of meeting these needs in patients who were undergoing the cardiovascular surgery (CVS).

Method: This study, which was in conformance with the descriptive study design, was carried out on 34 patients in the Cardiovascular Surgery clinic at a university hospital. As data collecting tools, the Personal Information Form and The Patient Learning Needs Scale (PLNS) were used. The status of meeting the need items were determined by evaluating each scale item between 1 and 6 (1: information was not given, 6: complete information was given). The mean, frequencies, Kruskal Wallis and Mann Whitney U tests were used in the statistical analyses of the data.

Results: It was found that the PLNS total point averages were 200.85±31.32 for the patients participating in the study and that it was at a very significant level (level of significance: 4.02). The most important learning need for patients was determined to be the treatments and complications sub-dimension at 4.33 and the least important learning need was determined to be the feelings related to the status sub-dimension with a level of significance of 3.71. From the information attributes of the patients, a statistically significant difference was found between the status of feelings sub-scale with the marital status (p = 0.02), between the society and observation sub-dimension and status with the work status (p = 0.03) and between the duration of surgery and treatment with complications (p = 0.04). When the status of meeting the learning needs of the patients was examined, the needs were met at the highest ratio for "How should I take each of my medicines (such as on an empty or full stomach)?" at 3.52±2.00 and were met somewhat "For how long should I use each of my medicines?" at 3.38±1.95 and it was determined that a majority of the other needs were not met in a suitable manner.

Conclusion: At the conclusion of the study, it was determined that the learning needs of the patients were at a high level and that these needs were not met by the health workers. It is proposed that nurses plan and implement patient learning by determining the release from hospital needs of the patients, that they plan effective education according to the sociodemographic variables of the patients and that they evaluate whether or not the learning needs of the patients were met.

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Theoretical-practical training of students from high school to care for cardiac arrest: a prospective study

V De Freitas Marcolla,¹ ER Santos,¹ IPB Aragao,¹ G Carvalho,¹ M Canedo,¹ RB Gomes,¹ LVBO Oliveira,¹ KP Silva¹ and KR Silva¹

¹Governo do Estado do Rio de Janeiro, Rio de Janeiro, Brazil

Cardiovascular diseases are the leading cause of death in the world, sudden cardiac arrest is a major contributor to this index. Training reduces the ignorance and fear, increasing safety to recognize that the victim is not breathing properly, so as to trigger the help and start CPR as soon as possible.

Objective: To apply a theoretical-practical training of vocational public high school, to work correctly, quickly and safely before a cardiopulmonary arrest, resuscitation maneuvers running efficiently, in order to save lives.

Methods: This study was designed as a prospective investigation in all of 1800 students of vocational public high school, between 2012 and 2013. The program of theoretical and practical training lasts 2 hours. Each student attends a lecture with video on the subject for 30 minutes after 30 minutes of classroom practice. Then, using practical training mannequin, which are assessed through a performance checklist. A questionnaire was distributed before the start of training to see if the student had prior knowledge about a rescue in the event of cardiac arrest.

Results: More than 50% did not have any knowledge about the subject. This evaluation showed that after 2 hours of training and analyzed the performance checklists: 85% knew how to perform the procedures call for help effectively, 30% were able to recognize the absence of breathing, 35% positioned themselves and began of chest compressions recommended form.

Conclusion: Students from that school are represented by 90% of adolescents when trained are able to act in the scene of a cardiac arrest, multiply the knowledge to family and community and save lives. However, according to the international recommendations of retraining as an ideal that does not exceed two years.

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The use of groups in prevention and rehabilitation of cardiovascular disease: how do you start and maintain groups.

E S Froelicher¹

¹University of California San Francisco (UCSF), San Francisco, United States of America

The objectives of this presentation are to provide the participant with the :

- (1) Theoretical aspects of the use of groups for therapeutic purposes
- (2) Practical aspect of the logistics of conducting group counseling
- (3) Examples of group interventions that work.

Traditionally nurses educate patients and families individually; however, there is ample documented from research that while gaining information is the first step in changing lifestyles, education alone does not achieve behavioral changes. Additionally there is research that documents the value of using groups for education, counseling and behavioral intervention.

The use of groups is not only a cost effective way to deliver the messages for risk reduction and to council patients and their families, but the value of the group process has been validated through research. However, nursing programs seldom prepare their graduates for the use of group interventions. This presentation will provide the theoretical as well as practical information (“nuts and bolts”) of group work of how to plan and organize the delivery of cardiovascular disease prevention services as well as tertiary prevention (rehabilitation) using groups. Empirical evidence to support the use of groups in counseling of patients and families with cardiovascular disease will also be provided.

Summary: Using a population approach to cardiovascular disease prevention not only requires the usual skills in patient teaching, but calls for new models to deliver this type of intervention to patients, families and communities. The approach of using groups has been well established in some clinical circles, but is relatively new to nurses. Thus, this presentation will provide a perspective to this type of intervention format.

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Psychological interventions to improve staff welfare in a paediatric intensive care staff: Project for a pilot study

M Marotta,¹ D Lucetti,¹ M Marchi,¹ P Da Valle,¹ E G Laws,¹ A Guerra,¹ M Cantinotti,¹ R Moschetti,¹ S Baratta¹ and F Nardini¹

¹Fondazione Toscana Gabriele Monasterio, cardiothoracic, Massa, Italy

Background: With the rise in pension ages and increasing demands on health care staff developing and investing in human resources is essential to provide a sustainable work ability. The negative impacts of work stress leading to increased depression, decreased job satisfaction, and psychological distress must be confronted in order to maintain an efficient and effective performance, it is therefore important to implement measures to improve staff welfare. Intensive care environments are particularly stressful. The literature confirms that ICU staff show signs of post traumatic stress disorder with high burn out and compassion fatigue. Best practice statements recommend interventions. In our institute the paediatric cardiothoracic intensive care unit.(PICU) staff were showing evident signs of distress and two meetings using an empathic listening technique showed a need to intervene. Our institute is relatively small and job opportunities in less stressful environments are very rare.

Aim: To improve staff welfare, prevent staff burn out, and retain expert human resources in a PICU.

Method: Study population : 30 PICU nursing staff, 28 female, 2 male. age range 51 years to 26 years (mean age 36.5). Years of service range : 24 years to 1 year. A series

of programmed meetings led by a clinical psychologist will be arranged. During the meetings stress management training will be given using the relaxation techniques based on MBSR (Mindfulness-Based Stress Reduction). The staff will be evaluated at the beginning and at the conclusion of the "course" using the test retest procedure. We intend to use the PGWBI (Psychological General Well-Being Index) questionnaire and a more general feedback evaluation module to evaluate the intervention as a whole.

Expected results: Improve staff welfare in the PICU, reduce conflict, perceived stress and compassion fatigue.

Conclusion: Feedback from the staff after the initial two meetings has been very positive. Great interest has been shown among the participants to improve their coping skills and there is a general perception that the hospital direction "cares" about them which has already improved staff moral.

Arrhythmias/Heart Rhythm disorders and treatment

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Occurrence of frailty syndrome in patients with heart rhythm disorders

A Mlynarska,¹ R Mlynarski,² A Kubida,² M Sosnowski¹ and K Golba¹

¹Medical University of Silesia, Katowice, Poland ²Upper Silesian Cardiology Center, Katowice, Poland

Background: The occurrence of frailty syndrome in patients with heart rhythm disorders is still underestimated. Aim of the study was to assess the prevalence of frailty syndrome in patients with heart rhythm disorders qualified for pacemaker implantation.

Methods: The study included 171 patients (83W, aged 73.9 ± 6.7) qualified for pacemaker implantation due to sinus node dysfunction (SND) or atrio-ventricular blocks (AVB). Patients were divided into 2 groups depending on indications: SND – 81 pts. and AVB – 90 pts. In both groups patients were additionally divided into subgroups according ESC classes of recommendations (I, IIa, IIb). The frailty syndrome has been recognized by using CSHA-CFS test.

Results: Exact results are presented in the table below. 33.3% of patients with AVB had frailty syndrome recognized (classes recommendations - I: 12.2%; IIa: 10.0%; IIb: 11.1%). 16.1 % of patients with SND had frailty syndrome recognized (classes recommendations - I: 4.9%; IIa: 9.8%; IIb: 1.2%). In the patients with AVB, frailty syndrome was significantly ($p = 0.002$) more frequent diagnosed compared to the group SND. Significant differences were also observed in class I, where implantation of pacemaker

Table 1. Main points of CSHA-CFS.

Class of recommendation	SND	AVB	P
I	3,57 ± 0,79	4,28 ± 1,01	0,009
IIa	4,07 ± 1,09	4,19 ± 0,98	0,713
IIb	3,52 ± 0,7	4,11 ± 0,89	0,005
general	3,72 ± 0,89	4,17 ± 0,93	0,002

is recommended and IIb, where implantation may be considered. In class IIa, where implantation of pacemaker should be considered, differences were not significant.

Conclusion: Frailty syndrome more frequently occurred in the patients with atrio-ventricular blocks if compared to the patients with sinus node dysfunction, especially in ESC classes of recommendation I and IIb for pacemaker implantation.

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Regional home cardioversion study of atrial fibrillation. Pilot study on feasibility and safety.

G Hengstman,¹ SAM Said,² FL Van Eenennaam,³ CJM Doggen,⁴ IC Van Gelder⁵ and HJGM Crijns⁶

¹Cardiovascular Research Institute Maastricht (CARIM), Maastricht, Netherlands ²Hospital Group Twente, Cardiology, Hengelo, Netherlands ³Ambulance Oost, Ambulance service, Hengelo, Netherlands ⁴University of Twente, Health Technology and Services Research, Enschede, Netherlands ⁵University Medical Center Groningen, Cardiology, Groningen, Netherlands ⁶Maastricht University Medical Centre (MUMC), Cardiovascular diseases, Maastricht, Netherlands

Background: Previous publications have shown beneficial effects of direct current (DC) electrical cardioversion (ECV) in hospitalised patients, or at the emergency department (ED) or at private practice settings on persistent atrial fibrillation (AF) patients performed by different health care professionals.

Aim: In the present study we sought to investigate the feasibility and safety of home DC-ECV in adult patients.

Methods: A prospective study of home-based DC-ECV conducted by specialized emergency care practitioners (ECPs). Instantly monitoring by an on-duty cardiologist and telephone consultation by an on-duty anesthesiologist is provided. Follow-up period of 6 weeks will be encountered to monitor the recurrence of AF, complications and adverse events.

Endpoints: in this feasibility and safety study the (a) feasibility endpoint is completion of cardioversion (% of study patients in whom a home cardioversion is performed, i.e. to whom at least one DC countershock was administered); (b) safety endpoint: a composite of MACCE occurring within 24 hours.

Secondary endpoints: MACCE occurring during 6 weeks follow-up; any hospitalisation and all-cause mortality during 6 weeks follow-up; number (%) of patients in sinus rhythm at the end of the procedure; idem at the end of 6 weeks follow-up.

Design: The study is designed as a pilot, open-label, non-controlled, non-randomised, single centre clinical study. The RACE-6 study is a prospective observational community study which will be carried out in the Netherlands by well-trained ECPs, initiated and coordinated by Ambulance Oost, Hengelo at the East region of the Netherlands in cooperation with Hospital Group Twente, University of Twente, Maastricht University Medical Centre and University Medical Centre Groningen with the intention to find answers regarding feasibility, safety and costs of home DC-ECV versus hospital DC-ECV in adult population.

Hypothesis: Home DC-ECV in general population patients with an episode of symptomatic recurrent persistent AF, carried out by ECPs, is feasible, safe and is associated with reduced costs.

Expected results: Information will be gathered regarding feasibility of home DC-ECV. The study will assess and provide an answer for the safety of home versus hospital DC-ECV. In addition, the cost-effectiveness relationship of home versus hospital DC-ECV will be calculated.

Conclusion: The RACE-6 study is a home-based DC-ECV treatment of patients with symptomatic recurrent persistent AF and will try to provide information with respect to the feasibility, safety and cost aspects of home versus hospital DC-ECV.

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Case of recurring collapses in young woman without structural heart disease and unrecognized long QT syndrome - cardiac channelopathy in practice

J Galuszka,¹ M Taborsky,² I Buriankova,³ T Skala³ and M Fedorco³

¹Palacky University, Faculty of Health Sciences, Faculty of Medicine and Dentistry, Olomouc, Czech Republic ²Palacky University, Faculty of Medicine and Dentistry, Department of Internal Medicine I - Cardiology, Olomouc, Czech Republic ³University Hospital Olomouc, Department of Internal Medicine I - Cardiology, Olomouc, Czech Republic

Introduction: Malignant arrhythmias can occur in association with structural abnormality of myocardium or due to inherited abnormalities on molecular basis causing abnormalities on ion channel level. Different types of inherited cardiac channelopathies associated with ventricular arrhythmias were recognized: Long QT syndrome, Short QT syndrome, Brugada syndrome, Catecholaminergic Polymorphic Ventricular Tachycardia.

Case report: Girl 17 years, 51 kg, 156 cm, with 4 year history of occasional lost of consciousness. Previously

controlled by neurologist with suspicion for epilepsy despite normal finding on EEG and brain MR. She was treated with sertraline for anxiety and “panic attack”.

Evaluation: Normal heart morphology on echocardiography and heart MR study. Multiple ventricle ectopies and QTc interval 500 ms during exercise test examination. Sustained ventricle tachycardia Torsades de pointes during Holter monitoring - Loop recorder.

The course of illness: Primoimplantation of 1 D ICD (secondary prevention of sudden death), stop sertraline administration. Repeated readmission to cardiologic department during next 2 years due to inappropriate cardioverter - defibrillator discharges caused by different complications: double counting, subclavian crush syndrome, electrode displacement. She is in stable status after third revision of defibrillatory system.

Conclusion: Complex approach of examinations including cardiac testing is crucial for evaluation of collapses/syncope also in young patients. Inappropriate pharmacotherapy in case of misdiagnose can be iatrogenic factor worsening of the disease. Inherited cardiac channelopathies are frequently underdiagnosed although their potential association with life-threatening arrhythmias. Permanent pacing could be associated with different types of technical problems. Long QT syndrome is associated with abnormalities involving potassium channels, sodium channels, calcium channels as well as nonchannel protein in myocardium.

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An unusual cause of lone atrial fibrillation

G Lee¹

¹King's College London, Post Graduate Research, London, United Kingdom

A 46 year old female presented to Accident and Emergency (A&E) complaining of palpitations. The patient reported ongoing symptoms for 30 minutes at the time of presentation. On arrival, her main symptoms were ‘pounding heart’, a fluttering feeling in the throat and mild chest discomfort. The patient was triaged as category 2 using the Manchester Triage Scale and a 12-lead ECG confirmed Atrial Fibrillation (AF). The patient was admitted to a monitored bed. No previous medical history was noted. Allergies to grass pollen & cats & mild asthma were noted but no regular medications taken. There was no family history of AF or heart disease. The patient (a cardiac nurse) was not unduly distressed & was accompanied by her spouse. Socially the patient was usually fit & well and worked full time, was a non-smoker and drank 4-6 units of alcohol a week.

Observations were BP 130/80, pulse 115bpm, respiratory rate 16 & oxygen saturations of 98%. Routine bloods were taken, IV cannulation performed & continuous

monitoring instigated. Pulsus alternans was noted on examination & no other significant findings noted. Blood results were within the normal range and urinalysis was negative. After 4 hours of AF at a rate of 110bpm, an emergency physician examined the patient and ordered a chest x-ray which was clear. Following discussion with the emergency consultant, it was decided electrical cardioversion was appropriate. Conscious sedation with propofol was applied & cardioversion undertaken (100 Joules). Sinus rhythm was restored (54 bpm, BP 90/60). The patient was discharged home & on review 48 hours after discharge, the patient remained in sinus rhythm & informed the consultant about their use of glutamine (a dietary supplement). The patient believed that glutamine was responsible for their AF as she had accidentally exceeded the recommended dose 3 days prior to their A&E presentation. There is some anecdotal evidence in the literature of glutamine causing AF but the mechanism is unclear.

With regards to patient management, once the obvious causes of AF were ruled out (infection, underlying heart disease, thyroid disorder), the emergency physicians ordered a transthoracic echocardiogram but did not organise any further follow-up. The implications from this case study suggest that lone or idiopathic AF detected in younger people needs better management & where possible, the cause identified & high priority given to identifying predisposing factors. Given the serious adverse events associated with AF, this case study suggests AF guidelines are not being routinely used within the emergency setting.

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Effect of radiofrequency catheter ablation on quality of life in patients with Wolff Parkinson White syndrome

I Benko,¹ G Hursa,¹ Š Manola,¹ N Pavlovic,¹ V Radeljic,¹ D Soric Norsic,¹ G Spitek¹ and V Vlahek¹

¹University Hospital Sestre Milosrdnice, Institute of Cardiology, Center for Arrhythmias and Cardiac Pacing, Zagreb, Croatia

Background: Wolff-Parkinson-White (WPW) syndrome is a syndrome of intermittent tachycardia in patients with a short PR interval and a widened QRS complex in their electrocardiogram (preexcitation). WPW syndrome results from an accessory pathway that directly connects the atria and ventricles and bypasses the AV node. The prevalence of a preexcitation pattern in the surface ECG is estimated at 0.13 to 0.25 percent in general population. The majority of patients with the preexcitation pattern on their electrocardiogram (ECG) remain asymptomatic, although a percentage of patients with the preexcitation pattern develop arrhythmias as a part of the WPW syndrome. Most patients who develop an arrhythmia will present with palpitations, with syncope

or sudden cardiac death occurring much less frequently. Catheter ablation using radiofrequency (RF) has become the cornerstone therapy in the management of patients with this types of tachyarrhythmia. The rates of success for accessory pathways ablation are typically greater than 90%.

Methods and Results: The specific QLAF questionnaire (questionnaire for quality of life in AF patients from Sao Paulo group in 2009) based on clinical manifestations (palpitation, breathlessness, dizziness and chest pain), and the usual treatments (medication, cardioversion and ablation) was used to assess quality of life in 154 consecutively selected patients before and after catheter ablation of the accessory pathway. Data were collected retrospectively by telephone interviewing at least 6 months after ablation. Catheter ablation was followed by improved performance of activities of daily living and in the number of palpitations or visits to emergency rooms in the 6 months after ablation.

Conclusion: Radiofrequency catheter ablation significantly improves quality of life for patients with Wolff Parkinson White syndrome.

Acute cardiac care/Ischaemic heart disease and revascularisation

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Predictive role of osteoprotegerin in coronary vasculature damage among patients with type two diabetes mellitus

A Berezin¹ and A Kremzer¹

¹State Medical University, Zaporozhye, Ukraine

Background: Osteoprotegerin (OPG) is a bone-related glycopeptide produced by vascular smooth muscle cells due to arterial damage. OPG is considered as an independent predictor of cardiovascular disease in diabetic populations.

The aim of this study was to evaluate the interrelation between circulating OPG and coronary vasculature damage in type two diabetes mellitus (T2DM) patients.

Methods: 126 subjects with stable T2DM with previously angiographic documented asymptomatic CAD were enrolled to the study. Vessel-wall and plaque geometrical and compositional parameters were measured on contrast-enhanced CT angiography. The volume of intramural calcium of >320 HU in major coronary vessels was measured in 428 coronary segments with a highly standardized method. Coronary artery calcification was quantified by calculating the Agatston' score index and calcification mass measurement. OPG plasma levels were measured with ELISA.

Results: Circulating OPG level was increase in 105 patients (5201 pg/ml [95% confidence interval (CI) = 3605-6280 pg/ml] and was normal in 21 subjects (880 pg/ml;

95% CI = 745-1140 pg/ml; $P < 0.0001$). The relationship between coronary artery calcium by Agatston' score index and percent atheroma volume (PAV) was determined by linear regression. PAV and remodeling index were significantly higher in patients with elevation of OPG plasma level when compared with those who have normal OPG (adjusted odds ratio (OR) = 4.60 [95% CI = 2.23-14.50]; $P = 0.006$). There was significant correlation between Agatston' score index and PAV ($r(2) = 0.46$, $P = 0.008$). Results did not change after adjustment for age, body mass index, hypercholesterolemia, arterial hypertension, and exposure of antidiabetic drugs ($\beta = 0.490$, 95% CI = 0.31-1.02, $P = 0.282$). Comparable results were found for calcification mass. However, minimal luminal diameter and minimal luminal area were higher in patients with normal OPG plasma level ($P = 0.002$).

Conclusion: We demonstrated that OPG plasma level can associate with vessel-wall thickening, percent atheroma volume, and Agatston' score index value in T2DM patients with previously angiographic documented CAD. Results from this study underline the importance of this biomarker use for screening procedure in diabetic populations aimed to specify of coronary vasculature damage severity and probably to recalculate cardiovascular risk.

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Implementation of immediate mobilization after coronary angiography (CAG) and percutaneous coronary intervention (PCI)

SR Ejby,¹ EN Larsen,¹ RMA Lykke,¹ MM Nordestgaard¹ and A Pedersen¹

¹Odense University Hospital, Department of Cardiology, Odense, Denmark

Purpose: The aim of this study was to implement immediate mobilization of patients after Coronary Angiography (CAG) and Percutaneous Coronary Intervention (PCI). Studies have previously shown that immediate mobilization of patients after CAG and PCI is safe. In 2014, staff meetings in the nursing group revealed, that they had not adopted this knowledge into practice. Nurses felt insecure to mobilize patients immediately after CAG or PCI. It was important to empower the nurses in the wards to facilitate the implementation process. Thus the new knowledge about mobilization had failed to be implemented, new actions were needed.

Methods: For the purpose of enhancing adoption, we initiated a theory based implementation process. A small working group consisting of four nurses and the head nurse of department of cardiology was put together. The group initiated implementation of immediate mobilization among CAG/PCI patients by changing the routines in the department. Specifically the patients were transported in a wheelchair, instead of a bed, back and forth from CAG or PCI for two months. When the working group decided changing routines, we also decided changing routines for

patients undergoing pacemaker (PM) implantation. Safety for the transport was monitored for all patients. If complications of the procedure required observation of the patient during transport, the transportation was changed to a bed.

Results: During the study period, 237 patients were included. Due to complications, 22 (9%) changed transportation back to the ward from wheelchair to bed. These changes were due to more than one insertion, antiplatelet infusion, bleeding complications, ventricular tachycardia and two patients with unknown cause. No adverse events happened while patients were transported in a wheelchair from CAG, PCI or PM to the wards. The patients expressed satisfaction. A few patients who had tried the old procedure informed that they did not feel as sick and it was nice to be able to sit in a chair following CAG, PCI or PM instead of bed rest. The new transportation procedure has resulted in that some patients do not need a bed, but sit in a chair while hospitalized. The new routine has been adopted by the nursing group and a new clinical guideline has been developed.

Conclusion: By empowering and including the nurses in the implementation process resulted in successfully implementation of immediate mobilization of patients after CAG/PCI. Trust in the impact of a theory based implementation can lead to adoption and change in practice instead of rejecting implementation of new knowledge.

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Effect of ice bag application to femoral region on pain in patients undergoing percutaneous coronary intervention

S Korkut Bayindir,¹ G N Guleser¹ and A Oguzhan¹

¹Erciyes University, Kayseri, Turkey

Background: The present study is a randomized-controlled, experimental research conducted to determine the effect of ice bag application to femoral region on pain in patients undergoing percutaneous coronary intervention.

Methods: The study was completed with totally 104 patients being 52 in experimental group and 52 in control group who met the inclusion criteria. Data were collected with Patient Identification Form, Numeric Rating Scale (NRS) and Vital Signs Monitoring Form by the researcher. Cold application with ice bag was done for 20 minutes before removing the catheter to experimental group and the catheter was removed only by the nurse responsible for this process in the clinic immediately after the ice bag was removed. Standard procedures of the clinic were applied to control group. According to the relevant standard procedures, the catheter was removed by the nurse without any application to femoral region. The pain experienced by patients was evaluated for three times being prior to ice bag application, during catheter remove and after catheter remove while the nurse was pressing upon the catheter

region. Score of NRS prior to ice bag application was defined as "NRS1", during catheter remove it was defined as "NRS2" and after catheter remove while the nurse was pressing upon the catheter region catheter it was defined as "NRS3". Signed forms of consent for the study were obtained from patients after the ethics committee approval. Descriptive statistics, chi-square test, Mann-Whitney U test, Wilcoxon test and Friedman analysis were used for statistical data analysis.

Experimental and control groups were found to be similar in terms of median NRS1 scores ($p > 0.05$). Median score of NRS2 was determined as 4.0 (3.0-4.0) and 6.0 (4.0-7.0) in experimental and control groups, respectively and this difference was statistically significant with an advanced level ($p < 0.001$). Also, behavioural responses given to pain were significantly lower in experimental group than controls ($p < 0.05$).

Results: Results demonstrated that ice bag application to femoral region was efficient in decreasing pain induced by femoral catheter remove in patients undergoing percutaneous coronary intervention. Therefore, local ice bag application may be recommended as a nursing intervention for controlling pain in these patients.

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The implementation of nursing care guidelines and checklists in the coronary catheterization laboratory

DZ Zughaft¹

¹Lund University Hospital, Department of Cardiology, Lund, Sweden

We present a clinical case of a previous healthy, 56 years old woman, presenting with symptoms of stable angina during exercise. This was an active woman with a large social network and a central person in her family, consisting of many close relatives. Her primary health care provider referred her for a myocardial scintigraphy, where a defect in the area supported by the Left Anterior Descending Coronary Artery (LAD) was found.

Following the scintigraphy, she was admitted for a coronary angiogram where a chronic total occlusion of the LAD was found. In addition, there was a significant stenosis of the Right Coronary Artery (RCA). Because of the severity of the coronary heart disease, the findings were discussed in a multidisciplinary conference. The recommendations of the conference was to treat the chronic occlusion (CTO) by a percutaneous coronary intervention (PCI) of the LAD. She arrived electively to the hospital one month later for the CTO procedure.

The procedure started out by a femoral puncture site approach. When the guiding catheter was inserted in the Left Coronary Artery, a rare and unfortunate complication occurred with a severe damage of the Left Main and the Left Circumflex Artery (Lcx). Due to the already impaired

coronary perfusion by the CTO, this complication was indeed very serious. The patient's condition moved very quickly into a cardiogenic shock, soon followed by a cardiac arrest. Despite all resuscitation effort, the woman went *ad mortem* one hour later, approximately 4 hours after walking into the hospital from her home.

The multidisciplinary Heart Team

Following this case, we introduced the Heart Team. The role of the Heart Team, consisting of physicians, registered nurses and physiotherapists, is to develop preprocedure preparation routines, checklists and a routine of mandatory timeouts (The Cathlab Protocols) prior to the procedure. In addition, a risk stratification matrix has been developed and standard risk assessment is performed for every patient. Since the launch of this project, we have performed >250 similar procedures with no mortality and low complication rate. Furthermore, the success rate and the patient experience has also improved since the introduction of these cathlab protocols.

In conclusion, a multidisciplinary and holistic team approach is vital for patient safety and the success of the procedure. Introducing a complete program is beneficial for alignment of all staff members, accurate information to the patients and in terms of reaching the goal of mortality reduction and increased quality of life.

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Predicted values of complications in intensive care after coronarography using the EWS scale

M Mikl¹

¹University Medical Centre Maribor, Department of Cardiology and angiologija, Clinical Department of Internal Medicine, University Medic, Maribor, Slovenia

Introduction: Complications after coronarography can occur in the procedure itself, after admission to the ward or in later treatment. In this research we have focused on complications at the admission in The Laboratory for Invasive Kardiological Diagnostics and Intervention Kardiology (LIK) and we tried to predict them with the use of the Early warning score - EWS.

Methods: The research was carried out in a clinic for internal medicine on a sample (Convenience sampling) of 38 patients that went through coronarography. On the basis of the clinic documentation we calculated the EWS according to the values of physiological variables and predicted complications. For the processing of statistical data we used non-parametric tests and the ROC curve, considering statistical significance at $p < 0,05$.

Results: In the group of patients with complications a higher value of median EWS can be detected, namely 5.00 (IQR 3.75 – 9.00), while in the group of patients without complications the value of EWS median is statistically lower 1.00

(IQR 0.00–2.75) ($p = 0.001$). ROC curve for complications predicting gives a relatively high predicting value of the area under the curve (AUC) 0.85 and the confidence interval (CI) 0.71–0.99). Individual values of physiological variables at LIK according to complication occurrence are also statistically significant: the respiratory rate, according to complication occurrence ($p = 0.002$), application of oxygen ($p = 0.040$) and the value of SpO₂ according to the complication ($p = 0.003$). With variables of body temperature, systolic blood pressure, pulse rate and the patient's responsiveness there were no statistically significant differences noted.

Discussion and conclusions: We have concluded that the use of the EWS Scoring System is of assistance in determination of patients with a higher risk for their health condition deteriorating after coronarography.

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Primary coronary percutaneous intervention in diabetic versus nondiabetic patients. Outcome and follow-up. Independent predictors of survival and event free survival

I P Borges,¹ ECS Peixoto,² RTS Peixoto³ and RTS Peixoto⁴

¹Rio de Janeiro State Government, Rio de Janeiro, Brazil ²Fluminense Federal University, Rio de Janeiro, Brazil ³Polícia Militar do Rio de Janeiro, Rio de Janeiro, Brazil ⁴Aloysio de Castro State Institute of Cardiology, Rio de Janeiro, Brazil

Objective: Some studies showed that diabetic patients (D) group (DG) had a worse outcome when compared to nondiabetic (ND) patients group (NDG), after primary percutaneous coronary intervention (PCI). The objectives were to compare mortality and major coronary events (MACE) at 30 days and 1 year of DG and NDG submitted to primary PCI and to study whether other conditions were related to worst outcome of patients in 30 days or one year.

Methods: Prospective study with 450 consecutive patients submitted to PCI from 01/01/2001 to 12/31/2006 (121 D and 329 ND) with ST-segment elevation acute myocardial infarction (AMI) in the first 12 hours of symptoms presentation treated with balloon catheter or bare metal stent and without cardiogenic shock. We used in statistical analysis: Student t test, chi-square test, Fischer exact test, and multivariate analysis: logistic regression and Cox analysis.

Results: DG and NDG had similar age (63.1 ± 10.0 and 62.3 ± 11.7 years, $p = 0.443$), male gender (63.6% and 69.9%, $p = 0.205$) and multivascular disease (66.1% and 60.8%, $p = 0.301$). The diabetic group had more dyslipidemia ($65.3\% \times 51.7\%$, $p = 0.009$) and severe left ventricular dysfunction ($15.7\% \times 8.2\%$, $p = 0.019$). The stent implantation rate was (83.5% and 81.1%, $p = 0.863$) and glycoprotein (GP) IIb/IIIa inhibitors utilization (79.3% and 82.2%, $p = 0.831$) were similar. The mortality at 30 days (2.5% and 2.7%, $p = 1.000$) and at 1 year (5.0% and 6.7%, $p = 0.650$) and

MACE at 30 days (4.1% and 6.4%, $p = 0.496$) and at 1 year (19.4% and 15.4%, $p = 0.3492$) were similar. The absence of TIMI III flow after the procedure (procedure failure) was the only independent hospital mortality (30 days) predictor ($P < 0.001$, OR = 8,045, CI95 2,327-27,816). Procedure failure ($p = 0.023$, HR = 3,364, CI95 1,182-9,578) and age ≥ 65 years ($P = 0.035$, HR = 3,391, CI95 1,091-10,543) were independent predictors of mortality at 1 year. The multivessel coronary disease ($p = 0.023$, OR = 4,218, CI95 1,223-14,545 and procedure failure ($P < 0.028$, OR 3.155, CI95 1,132-8,799) were independent predictors of MACE at 30 days and multivessel coronary disease was independent of MACE at 1 year ($p = 0.034$, HR = 1.854, CI95 1.048-3.280).

Conclusion: The diabetic patients submitted to primary PCI had mortality rate and MACE similar to none diabetic patients at 30 days and 1 year. The absence of TIMI III flow were predictor of mortality at 30 days and 1 year and age ≥ 65 years at 1 year. Independent predictors of MACE at 30 days were multivessel coronary disease and absence of TIMI III flow (procedure failure) and at 1 year was multivessel coronary disease.

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Measurement of subjective feelings of pain after setting transradial band with nurses involved in the care of patients after coronary angiography transradial access

B Lesko,¹ L Ban,¹ I Tomasic,¹ V Sedinic,¹ V Slonjsak,¹ M Pavlinic,¹ R Cosic,¹ J Daskijevic,¹ D Rakidija¹ and M Pavlicic¹

¹University Hospital Centre Sestre milosrdnice, Department of Cardiology, Zagreb, Croatia

Purposes: Last few years coronarography is more and more performed with transradial approach (TRA) through the radial artery at the wrist. In our cath lab TRA was first time performed in 2006, and nowadays about 95% of all invasive coronary procedures are performed with right or left TRA. After completing the angiography and removing the introducer, special compression plastic string is placed on puncture site and removed 3-4 hours later. The greatest advantages of the TRA can be seen with the most severe and demanding patients. After TRA patients are more mobile and independent, have less vasovagal reaction and blood pressure is better controlled. For the nurses, that simplifies and shortens the process of perioperative care for patients. Surely TR band can produce pain in wrist and we concentrate on nursing diagnosis pain produced with compression / band. Pain is a subjective sense, and we tried to objectify it through the measurement of pain level in nurses that participate in the care of patients after TRA.

Methods: In this study we set a TR band by standard protocol on 30 nurses participating in the care of patients after TRA. They express feeling of pain / discomfort on a scale from 0 to 10 during the period; 0 - start, 1 - after 20

minutes, 2 - after 40 minutes. We divided them into three groups depending on the length of service in cardiology department: A - more than 10 years, B - 5-10 years, C - less than 5 years.

Results: The study showed that the majority of group A and B at baseline (0) had a middle-tolerance of pain, and the most of Group C had a higher tolerance to pain. After 40 minutes of testing, participants in all three groups had a higher tolerance to pain. In group A only few examinees had a lower tolerance to pain, the reason could be in the size of the hand. Nevertheless groups A and B showed greater sensitivity to pain, probably because of their longer experience with patients. On the other hand, reduced sensitivity to pain among participants in group C can be explained by the inability of accepting the role of patients.

Conclusion: Communication plays an important role in everyday life and especially in the patient – nurse relationship. The patient has a subjective sense and nurse needs to objectify nature and severity of pain to have right reaction. Understanding the feelings of local pain in the wrist setting TR band significantly helped to raise awareness among nurses resulting in a greater empathy and better treatment of the patients. The purpose of successful communicative event for patients means improving health and nurse success.

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Coronary heart disease and genetic polymorphisms. Clinical, angiographic, procedure technique and long-term follow-up evaluation post percutaneous coronary intervention. major events and restenosis

I P Borges,¹ ECS Peixoto,² R Andrade,³ RTS Peixoto³ and RTS Peixoto⁴

¹Rio de Janeiro State Government, Rio de Janeiro, Brazil ²Fluminense Federal University, Rio de Janeiro, Brazil ³Policia Militar do Rio de Janeiro, Rio de Janeiro, Brazil ⁴Aloysio de Castro State Institute of Cardiology, Rio de Janeiro, Brazil

Background: There are clinic and genetic polymorphism differences in coronary artery disease (CHD). This study aims to evaluate if genetic polymorphism have some influence in long-term follow-up in patients with CHD, after percutaneous coronary intervention (PCI).

Methods: It were evaluated 182 patients. They were divided in two groups. The coronary disease group (CDG), with CHD of a closed health system, were submitted to PCI from 2001 and 2007 and to genetic evaluation and they were followed-up for one year. The control group (CG), with 36 patients, were angiographically normal and were submitted to genetic evaluation too. The polymorphisms evaluated were the ACE I/D and A166C (AT1R). In this period 221 procedures were performed in 182 patients. Restenosis was considered as symptoms and/or as a ischemic tests with angiographic restenosis. Qui square,

Fisher exact and Student t test were used. Cox multivariate regression analysis were not used because only three clinical characteristics and A166C had $P < 0.10$.

The CG and CDG patients were: female 20 (55.6%) and 49 (26.9%), ($P = 0.0007$); age 55.9 ± 11.1 and 60.8 ± 10.5 ($P = 0.0100$); tabaco smokers 5 (13.9%) and 67 (36.8%), ($P = 0.0132$); diabetes 4 (11.1%) and 48 (26.4%), ($P = 0.0802$); hypertension 29 (80.6%) and 146 (80.2%), ($P = 0.9631$); dyslipidemia 14 (38.9%) and 112 (61.5%), ($P = 0.0119$); family history 12 (33.3%) and 60 (33.0%), ($P = 0.9659$); obesity 9 (25.0%) and 60 (33.0%), ($P = 0.3476$); ACE polymorphism DD 16 (44.5%), DI 17 (47.2%), II 3 (8.3%) and DD 81 (44.5%), DI 70 (38.5%), II 31 (17.0%), ($P = 0.3612$); A166C polymorphism AA 36 (100.0), AC 0 (0.0%), CC 0 (0.0%) and AA 135 (74.2%), 42 (23.1%), 5 (2.7%), ($P = 0.0026$). In CDG with 221 procedures, there were no difference: between ACE and A166C polymorphism at one, two or three vessel disease; between majors events, deaths, AMI and revascularization; and between restenosis and the mean vessel diameter, lesion extension and bare metal or drug eluting stents (DES), although were implanted in 27 (12.2%) patients, being 15 (55.5%) patients with in stent restenosis and the others with small vessel diameter and long lesions.

In CDG there were more males, older people, more smokers, dyslipidemia and they were genetically A166C polymorphism different from CG, the latter did not have CC or AC. There were no differences between the variables studied and illness extension, major events and restenosis in the CDG, even in relation to bare Stent and DES, maybe because DES were used to the less favorable lesions and in stent restenosis.

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The frequency of sending patients on emergency surgical myocardial revascularization in the absence of cardiac surgery on site nursing interventions during transport

A Ognjenovic,¹ D Adzic,¹ D Radonjic¹ and A Zrnica¹

¹Department of Cardiovascular Diseases, Clinical Center of Banja Luka, Bosnia and Herzegovina, Banja Luka, Bosnia and Herzegovina

Introduction: Cardiovascular diseases are leading cause of death in the world as well in Bosnia and Herzegovina with more than 60% mortality rate. Patients with ACS whose condition requires performing emergency coronary angiography and percutaneous transluminal angioplasty with stent implantation are hospitalized in the our Hospital. In case of a patient with multiple clogged coronary arteries with a high percentage of stenosis where urgent CABG is needed such patient is urgently transported, accompanied by a nurse, to the nearest health facility that has a cardiac surgery which is 250 to 300 kilometers far

away. Due to the fact that those are highly vulnerable patients, cardiac nurse is an important part of the team.

Purpose:

- to compare the number of patients who had undergone percutaneous transluminal coronary angioplasty with the number of patients who were sent to the emergency surgical intervention;
- to determine the percentage prevalence of men and women sent to the emergency room to surgical revascularization;
- to determine the prevalence of risk factors in the patients undergoing urgent to surgical revascularization;
- to define the nursing interventions during the transport of patients;

Methods: In the period from 01.10.2014 to 31.10.2014, total of 261 interventions were performed in the Cat Lab. The patients data were obtained from the protocol, history of illness and written reports from the Cat Lab.

Results: From a total of 221 patients who were checked in the Cat Lab, 9 patients or 4.07% were transported for urgent surgical myocardial revascularization in a health facility that has cardiac surgery, while in 101 patients or 45, 70% of the percutaneous coronary angioplasty with stent implantation were made, which is at a high level. All nine patients referred for urgent coronary bypass had 3 or more risk factors for cardiovascular disease. From a total of 9 patients, 6 were men (66.67%) and 3 were women (33.33%). The nursing interventions during transport of patients are as following: to lay the patient in the horizontal position, to control of vital functions, to control of flow cannula and infusion and the occurrence of pain the patient will be given oxygen and medication by nurse, constant supervision of the patient.

Conclusion: Since the cardiac surgery is up to 300 kilometers far away, nursing interventions during transport are numerous and the role and importance of nurses is of a great importance.

Psycho-social/Patient perspective and psychosocial aspects

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The relationship between depressive symptoms, cardiac anxiety and fear of body sensations, and healthcare seeking behaviour in patients with non-cardiac chest pain

G Mourad,¹ A Stromberg,² P Johansson² and T Jaarsma¹

¹Linköping University, Department of Social and Welfare Studies, Norrköping, Sweden ²Linköping University, Department of Cardiology and Department of Medical and Health Sciences, Linköping, Sweden

Background: Chest pain is one of the most common reasons for hospital admissions and more than 50 % of

the patients admitted are diagnosed as non-cardiac and discharged without a clear explanation of the underlying cause for the chest pain. A number of patients with non-cardiac chest pain (NCCP) suffer from recurrent chest pain and use a substantial amount of healthcare resources leading to high healthcare and societal costs. Although depressive symptoms, anxiety, and fear of body sensations are prevalent in these patients and may have an impact on patients' healthcare seeking behaviour, the relationship between these psychological factors and healthcare seeking behaviour is not fully elucidated.

Objective: To investigate the prevalence of depressive symptoms, cardiac anxiety and fear of body sensations in patients acutely admitted to hospital due to chest pain and discharged with a NCCP diagnosis. Additionally, to explore how depressive symptoms, cardiac anxiety and fear of body sensations are related to each other and to healthcare seeking behaviour.

Methods: Cross-sectional descriptive design. Data were collected from 552 patients diagnosed with NCCP in four hospitals within one month from discharge using the Patient Health Questionnaire-9, Cardiac Anxiety Questionnaire and Body Sensations Questionnaire. Healthcare seeking behaviour the year before study inclusion (i.e. the number of healthcare contacts) was self-reported by the patients. Results: Of the study population, 141 (26 %) reported at least moderate depressive symptoms, 229 (42 %) reported at least moderate cardiac anxiety, and 337 (62 %) reported some degree of fear of body sensations. There were strong positive relationships between depressive symptoms and cardiac anxiety ($r_s = .49, p < .01$), depressive symptoms and fear of body sensations ($r_s = .50, p < .01$), and cardiac anxiety and fear of body sensations ($r_s = .56, p < .01$). 26 % of the study participants reported 2-3 healthcare contacts and 14 % reported more than 3 healthcare contacts due to chest pain. In a multivariable regression analysis, cardiac anxiety was the only variable independently associated with healthcare seeking behaviour.

Conclusion: Symptoms of psychological distress were more frequently reported by the patients with NCCP that had more healthcare contacts. Especially cardiac anxiety was associated with healthcare seeking behaviour, and may therefore be an important target for intervention. The results from this study will guide the development of a web-based intervention targeting cardiac anxiety to improve patient outcomes and reduce healthcare use and costs.

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The influence of pain on health-related quality of life in patients with cardiac disease

J M L Hendriks,¹ U Walfridsson,² A Stromberg,³ M Janzon,² J Martensson,⁴ T Hoekstra,⁵ H Ronning⁴ and T Jaarsma³

¹University Hospital Maastricht, Maastricht, Netherlands ²Linköping University Hospital, Linköping, Sweden ³Linköping University, Linköping, Sweden ⁴Jonköping University, Jonköping, Sweden ⁵University Medical Center Groningen, Groningen, Netherlands

Background: Health-Related Quality of Life (HRQoL) is often impaired in patients with cardiac disease. The majority of these patients suffer from pain of cardiac or non-cardiac origin. However, assessment of pain is often underutilised in daily practice. Pain can be a major factor influencing mental as well as physical health.

Purpose: The purpose of this study was to describe pain in patients with different types of cardiac disease and how it is related to other aspects of HRQoL.

Methods: We combined 6 databases with data of 3409 Swedish patients based on primary cardiac diagnoses including heart failure, arrhythmia, congenital heart disease and coronary artery disease. HRQoL and pain were assessed by the 36-Item Short-Form Survey (SF-36v1). Demographic characteristics were described with mean \pm SD and continuous variables were examined with Mann-Whitney U test. Bivariate correlations were performed to study associations between HRQoL and age or gender, expressed in Spearman's rank correlation coefficient (rs).

Results: The mean age was 66 ± 12 years, with congenital heart disease patients being significantly younger. 2230 patients (65 %) were male. The overall median score on Mental Health was 80 (Inter Quartile Range [IQR] 60 – 92). Correlations between Mental Health and Bodily Pain were less strong as expected, ranging from rs 0.361 to 0.499, being strongest in patients with congenital heart disease. The median score on Bodily Pain was 78 (IQR 45 – 100). Congenital heart disease patients scored highest on this scale, indicating better HRQoL, while heart failure patients had the lowest scores, indicating worse HRQoL. In all patient groups there was a strong correlation between Bodily Pain and Vitality, being strongest in congenital heart disease patients (rs 0.588). Patients had lower scores on the physical related subscales in case they experienced more pain. Strongest correlations were found between Bodily Pain and Physical Functioning (rs 0.600, coronary artery disease patients) and Social Functioning (rs 0.539, heart failure patients). Age was not associated with significant higher levels of pain, while gender, i.e. women, experienced poorer HRQoL in all domains, with a significant correlation in patients with coronary artery disease.

Conclusion: Pain is associated with physical impairment in patients with cardiac disease. Physical impairment in turn can be of major influence on daily life activities and experiences and can easily influence other aspects of HRQoL. Therefore assessment of pain in patients with cardiac diseases is strongly recommended.

Dissatisfaction with sexual-life in community dwelling elderly: associations to cardiovascular disease, gender, depression, anxiety and health related quality of life.

JS Josefine Svantesson,¹ UA Urban Alehagen¹ and P Johansson¹

¹Department of Cardiology, University Hospital of Linköping, Linköping, Sweden

Introduction: To investigate if elderly men and women with and without cardiovascular disease (CVD) rate satisfaction of sexual life different from each other. This study also examine how depression, anxiety and health-related quality of life (Hr-OoL) in men and women with and without CVD correlates with satisfaction of sexual life.

Methods: A cohort of 675 years community dwelling elderly mean aged 78 years were examined. Satisfaction with sexual-life was measured using a visual analogue scale with verbal anchors at each side expressing the extremes very satisfied (scored 0) and very dissatisfied (scored 100). Hr-OoL was measured using the physical and mental component scale (PCS and MCS) of the SF-36. Depression and anxiety was measured using the Hospital and Anxiety Questionnaire.

Results: A total of 429 (63%) participants responded to the item about satisfaction with sexual life. Those with CVD (42%, n = 180) had significantly higher scores of dissatisfaction with sexual life compared to those without CVD (mean 68.1 vs. 58.4, p = 0.002). Men and women with or without CVD did not differ in satisfaction. However, men with CVD scored significantly more dissatisfaction with sexual life compared to their counterparts (69.6 vs 59.7, p = 0.008), but this was not found among women (p = 0.34). Drop-out analysis showed that more women with CVD compared to women without CVD chose not to answer the item (67 % vs 48%, p = 0.001). This was not found among men. In men and women with or without CVD, satisfaction with sexual life correlated differently with PCS, MCS, depression and anxiety. In men with CVD (n = 145), the more dissatisfaction with sexual life the poorer PCS (r = -0.30, p = 0.001). In men without CVD (n = 119) the more dissatisfaction with sexual life correlated to higher scores of depression (r = 0.23, p = 0.017). In women with CVD (n = 35), satisfaction with sexual life correlated with none of the variables. In women without CVD (n = 135), the more dissatisfaction with sexual life correlated to higher scores of depression (r = 0.24, p = 0.01) and anxiety (r = 0.37, p < 0.001) and lower scores of MCS (r = -0.23, p = 0.012). In women with who didn't answer the item about satisfaction with sexual-life, those with CVD scored compared to those without CVD significantly lower PCS (p < 0.001).

Conclusion: CVD, particularly in elderly men, is associated more dissatisfaction with sexual life. In elderly without

CVD dissatisfaction with sexual life correlated with poorer mental Hr-QoL as well as with depression and anxiety. In those with CVD, dissatisfaction with sexual life correlated to poorer physical Hr-QoL.

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“It hasn’t really impacted my life, it was only a mild heart attack”. Patients with NSTEMI lack understanding about their illness and are less motivated towards secondary prevention

L Dullaghan,¹ L Lusk,¹ M Mcgeough,² P Donnelly¹ and D Fitzsimons³

¹Ulster Hospital, Belfast, United Kingdom ²Belfast Health and Social Care Trust, Belfast, United Kingdom ³University of Ulster, Belfast, United Kingdom

Background: In acute myocardial infarction (AMI) treatment is predicated by clinical presentation but despite all patients being told they have sustained a “heart attack” there are considerable differences in the speed and urgency with which they are admitted to the catheter laboratory and discharged from hospital. To date little is known about the impact of the different treatments in the trajectory of the patients’ experience after their first MI. This study aimed to explore the impact of these different treatment experiences on patient’s illness perception and motivation for behavioural change 1 & 12 months post AMI.

Methods: Semi-structured, domiciliary interviews (n = 15), were conducted with three groups of MI patients at these intervals: -

ST Elevation MI (STEMI) treated by

1. Primary Percutaneous Coronary Intervention - PPCI (n = 5) or
2. Thrombolysis (n = 5).
3. Non ST Elevation MI - NSTEMI (n = 5) treated with conventional medical and interventional therapy.

Themes were identified and refined using the framework method of analysis and compared between groups over time.

Results: Patients who presented with a STEMI and received either PPCI or thrombolysis had similar perceptions of their illness at 1& 12 months as a serious life threatening event. The urgency of treatment was a major factor in both groups’ understanding of the gravity of their MI at one month. Fear of having another event was more evident in these groups at one year than in the initial interviews. This caused both groups to be less confident and more cautious about day to day activities. Both groups had undertaken and maintained ‘conscious’ lifestyle changes to reduce the risk of a further event.

In contrast, patients with a NSTEMI experienced uncertainty about symptoms and diagnosis, causing misconceptions about the severity of their condition at baseline, which

persisted at 12 months. Many viewed their illness as a mild event leading to poor attendance at cardiac rehabilitation and less motivation for behavioural change at 12 months.

Conclusion: Patients with STEMI and NSTEMI expressed contrasting perceptions of illness severity and consequences, that seem to be derived from differences in clinical presentation and treatment experience. Data suggest these may impact on motivation for behavioural changes. Practitioners should consider the potential for such differences when individualising secondary prevention strategies.

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Experiences of post-operative delirium in octogenarian patients after transcatheter aortic valve implantation or surgical aortic valve replacement - a qualitative interview study

I Instenes,¹ E Gjengedal,¹ LSP Eide,² KKJ Kuiper,³ AH Ranhoff⁴ and TM Norekvaal²

¹University of Bergen, Department of Global Public Health and Primary Care, Bergen, Norway ²University of Bergen, Department of Clinical Science, Bergen, Norway ³Haukeland University Hospital, Department of Heart Disease, Bergen, Norway ⁴Kavli Research Center for Geriatrics and Dementia, Haraldsplass Hospital, Bergen, Norway

Purpose: Delirium is a common and serious complication after surgery, especially in older patients. Development in options of treatment has made it possible to perform Surgical Aortic Valve Replacement (SAVR) and Transcatheter Aortic Valve Replacement (TAVI) in spite of high age. This establishes a need for new knowledge to ensure satisfactory patient care. The purpose of this study was to explore and describe how octogenarian patients experience post-operative delirium after TAVI or SAVR.

Methods: This was a phenomenological study of octogenarian patients with severe symptomatic aortic stenosis (AS) who experienced post-operative delirium after elective TAVI or SAVR.

Inclusion criteria: was age 80+, able to understand and speak Norwegian and being mentally orientated. The presence of delirium was assessed for five post-operative days with the Confusion Assessment Method (CAM). Cognitive function was established with the Mini Mental State Examination (MMSE) at baseline and six months follow-up. In-depth interviews were conducted. The interviews were undertaken in the patients’ home six to twelve months after hospital discharge, transcribed verbatim and analyzed according to Giorgi’s phenomenological method.

Findings: Ten patients between 81 and 87 years participated in the study. Six of them were treated with SAVR and four with TAVI. Participants’ experiences are reflected in six themes: “Like dreaming while awake”, “The experience of time”, The feeling of anxiety, restlessness and panic”, “The feeling of being trapped”, “Being somewhere

else”, “Meeting with death and deceased”. The delirium experience was perceived as real for almost all of the participants, reflecting previous experiences in life for some of them. Others had difficulties separating day from night, and keeping record of time. The feeling of anxiety, restlessness and panic was overwhelming for many of them.

Some experienced “being in another place” than the hospital, and the presence of death was perceived on several occasions.

Conclusions: The findings illustrate the experience of delirium in older patients in need of aortic valve replacement. The study also shows that patients remember their delirious phase for a long period of time. To ensure the octogenarians a professional and empathic care after SAVR and TAVI, it is necessary to understand and acknowledge how they experienced delirium.

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Frailty - preoperative assessment and implications for nursing practice following heart surgery.

M Blakoe¹ and HG Greve¹

¹Rigshospitalet - Copenhagen University Hospital, Copenhagen, Denmark

Purpose: Due to the aging and increasingly complex nature of our patients, frailty has become a high-priority theme in the care of elderly patients undergoing heart surgery. It is a recognised geriatric syndrome, and frailty score is recommended as supplement to current risk scores for assessing elderly patients prior to open heart surgery. The purpose of this study is to identify elderly patients in risk of experiencing increased need for nursing interventions in the postoperative care following heart surgery, by investigating the predictive value of a 5-meter gait speed.

Method: A quantitative prospective study of 79 patients aged +70 years was conducted. Patients were admitted to elective heart surgery, and tested for frailty by using a 5-meter gait speed one day prior to operation. Three patients were excluded. Based on the gait speed results patients were divided into two groups: frail or non-frail. The two groups were compared during the postoperative period by using a prospective audit of nursing records, including 11 parameters.

Results: 21 patients (27,7%) were identified as frail, 55 patients (72,3%) as non-frail. The average number of days spent in intensive care unit, and spent in a primary treatment hospital were higher in the frail group, but the median values showed no difference. 76,2% of frail and 34,5 % of non-frail patients were transferred to another hospital (OR = 6, p = 0,002). Frail patients had an increased need of nursing care in order to be mobilized and an increased prevalence of organic delirium or confusion (OR = 4,4, p = 0,011). In terms of nutritional intake the frail patients

only achieved 50 % of their needs in relation to the non-frail group. The frail patients spent 2-3 times as many days with urinary catheter, and fluid-chart registrations, compared to non-frail patients. The need for CPAP and Laxative showed no significant difference between the two groups.

Conclusion: A 5-meter gait speed test, used as a frailty score can identify patients with a higher risk of experiencing increased needs for postoperative nursing interventions within selected parameters.

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Involving patients with congenital heart disease can optimize a person-centered care intervention in the outpatient clinic

I Sommer,¹ I Schjoedt,¹ H Friis Jensen,¹ A Laustsen¹ and J Rolf Svanholm¹

¹Aarhus University Hospital, Department of Cardiology, Aarhus, Denmark

Purpose: The literature reports that persons with congenital heart disease have special health care needs. The purpose of this study was to involve patients in developing the content and performance of Person-Centered Care (PCC) nursing sessions in the outpatient setting.

Methods: The session included patient narratives, partnership and documentation. A qualitative study with focus group interviews was conducted with four young adults with congenital heart disease before and after they participated in a PCC nursing session. Purposeful and pragmatic sampling was used. A facilitator used a semi-structured interview guide and interviews were audio-taped. A hermeneutic analysis was performed.

Results: Patients with congenital heart disease wished to be seen as persons and not as a disease. Although the young adults had no obvious need for a PCC intervention, they ended up requesting such sessions with a nurse. Patients required continuity in the contact with the nurse once PCC sessions had begun. They expressed that it was important for them to control and understand their disease; they had many questions about their disease, operations and previous admissions to hospital. The dialogue in the focus group illuminated several themes important for the patients in the PCC sessions. Themes were associated with existential, psychological and social problems. Patients expressed the need to talk with health professionals with special insight into their condition and situation, and they expected the professionals to contribute with expert knowledge in accordance with the person's perspective. They did not wish to participate in the documentation process. The patients recommended that all young patients were invited to a PCC session and that nurses should strongly encourage this; after one session the patient could decide to continue or stop.

Conclusion: The study indicates that involving patients in developing PCC can clarify and strengthen the intervention. Patients' perspective can contribute with examples and important themes which might be unknown to nurses. Patients wished to be supported in existential, psychological and social problems by a professional who is aware of specific implications in life related to congenital heart disease. The outpatient clinic should plan each session together with the individual patient. The quality of PCC could be improved by further involving patients in the organization of PCC, improving nurses' competences in PCC and evaluating the importance of PCC according to the patients.

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Factors influencing 36-month follow-up results of Quality of Life of patients with an acute coronary syndrome treated by coronary angioplasty

I Uchmanowicz,¹ B Jankowska-Polanska¹ and K Lobo-Grudzien²

¹Health Science Faculty Wroclaw Medical University, Wroclaw, Poland ²T. Marciniak Hospital - Department of Cardiology, Wroclaw, Poland

Introduction: Patients after acute coronary syndrome (ACS) constitute a very diverse group in terms of the severity and course of disease, pharmacotherapy applied, and effort tolerance. Medical diagnosis is not always accompanied by patients' subjective assessment of their health status and health related quality of life (HRQOL). Another important aspect is an influence of anxiety and depression on the HRQOL of cardiovascular patients. Modern treatment methods for ACS enable efficient therapy, but at the same time produce a lot of psychological problems.

Aim: To compare HRQOL results of 90 ACS patients receiving percutaneous coronary intervention (PCI) during a 3-year observation period.

Methods: The study involved 90 patients (55 men, 35 women) aged 39–84 (mean age 61.9 years) hospitalized due to ACS and qualification for coronary angioplasty in the cardiology ward. HRQOL was measured using the Medical Outcomes Study 36-item Short-Form Survey (SF-36) Polish version. An analysis of depressive symptoms was performed using the Beck Depression Inventory (BDI). The level of anxiety was determined using the Polish adaptation of the State-Trait Anxiety Inventory (STAI).

Results: An analysis of the dynamics of changes in the physical domain (PCS) revealed an unfavourable trend in the 36th month after surgery: 40.8 in the 1st week vs. 41 in the 6th month vs. 33.9 in the 36th month ($p < 0.001$). Similarly, an analysis of the dynamics of changes in the mental domain (MCS) demonstrated an unfavourable trend in the 36th month after surgery: 43.4 in the 1st week vs. 43.6 in the 6th month vs. 36.6 in the 36th month ($p < 0.001$). The

dynamics of change in the severity of depressive symptoms according to the BDI proved an increase from 4.6 in the 1st week to 10.4 points in the 36th month ($p < 0.001$). Changes in the levels of anxiety as a state and anxiety as a trait also showed an unfavourable trend: STAI-state: 28.5 in the 1st week vs. 34.3 in the 36th month ($p < 0.001$); STAI-trait: 30.0 in the 1st week vs. 33.9 in the 36th month ($p < 0.001$).

Conclusion: There is a relationship between HRQOL and such variables as gender, age, anxiety and depressive symptoms. The results of this study demonstrate that more attention should be focused on the distant quality of life of ACS patients after PCI, and especially on their mental status.

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Family support motivates younger patients to make positive lifestyle changes post myocardial infarction.

G Mcanirn,¹ D Fitzsimons,² L Lusk,¹ N Mckenna³ and C Hamill³

¹South Eastern Health and Social Care Trust, Belfast, United Kingdom

²University of Ulster, Belfast, United Kingdom ³Queen's University of Belfast, Belfast, United Kingdom

Introduction: Lifestyle change is challenging for all patients post MI, but the literature suggests younger patients may face distinct obstacles related to work, financial and family pressures. There is limited evidence regarding the impact of family life on behavioural change in this population.

Aim: To explore the issues encountered by younger (<50 years) patients as they attempt lifestyle changes post MI.

Methods: Semi-structured interviews ($n = 7$) using a Heideggerian phenomenological approach were conducted 6–8 weeks post MI and were taped and transcribed verbatim before framework analysis.

Results: Patients ($n = 6$ male) were aged 31–48 years. Four major themes were identified, the first three of these themes were in line with existing literature; Guilt, Grief and Disbelief. The fourth theme was Motivation, which built on the feeling of a “Wake-up call” and using the MI as “Starting blocks for a new lifestyle”. There were three distinct aspects to family motivation – Determined to survive, Improving health and quality of life personally and for family and Encouraging others to reduce risk. The need to support a young family was a strong motivator in each interview and participants were determined to survive and live healthier lives to achieve this. Adopting a healthier lifestyle was regarded as key to improving quality of life for them and their family. These younger patients took on the role of ambassadors, determined to reduce cardiovascular risk for those around them e.g. encouraging family members to lose weight, or colleagues to stop smoking and introducing healthier cooking options for the family.

Conclusion: This study illustrates the powerful motivating role of young family in MI patients' lifestyle change. Younger MI patients are prepared to make changes and sacrifices to improve their quality of life and that of their families. Innovative models of cardiac rehabilitation such as My Action actively encourage partners' participation with good outcomes, but children and other family members could also be involved. Health care professionals should harness the role of the family as a motivator when providing cardiac rehabilitation to potentially enhance outcomes.

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Difficulties experienced by men during the first year after their myocardial infarction and fatigue.

L Nordqvist,¹ S Thorn,¹ P Alsen¹ and I Berntsson¹

¹University West, The Department of Nursing, Health and Culture, Trollhättan, Sweden

Recovery from a myocardial infarction (MI) can be a very difficult process and some patients are also stricken by fatigue. The aim of the study was to describe the difficulties experienced by men with fatigue during the first year following their MI.

The study was conducted using qualitative content analysis of semi-structured interviews with nine men in working age (mean age: 55 years) with verified fatigue (≥ 12 of 20 on the Multidimensional Fatigue Scale) one year after their MI.

During the first year after the MI the men suffering from fatigue experienced various difficulties in terms of both themselves and the care received.

The analysis generated three themes with difficulties described by the interviewed men. 1) Going through involuntary change: not recognizing oneself due to the fatigue, incomprehensible symptoms, struggling with a threat. 2) Not being seen in the light of the social context: the MI affects the whole family and caregivers do not pay attention to the family. 3) Lacking individualized care: insufficient follow-up, not being examined by a cardiology specialist, discontinuous care, feelings that their problems are not taken seriously.

In order to make both the patient and relatives feel secure and cared for, it is essential caregivers be aware of the importance of providing individualized care over time with particular attention for the patient's social context.

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Development and initial evaluation of an internet-based cognitive behaviour therapy program for patients with heart failure and depression

J Lundgren,¹ G Andersson,² Ö Dahlstrom,² T Jaarsma,¹ A Karner Kohler¹ and P Johansson³

¹Linköping University, Department of Social and Welfare Studies, Linköping, Sweden ²Linköping University, Department of Behavioural Sciences and Learning, Linköping, Sweden ³Linköping University Hospital, Department of Cardiology, Linköping, Sweden

Internet based-Cognitive behavioural therapy (IB-CBT) could be beneficial for heart failure (HF) patients with depression. However no such programs have been developed or been evaluated in HF patients.

Purpose: (1) to describe the development of an IB-CBT program adapted to patients with HF and (2) evaluate the feasibility of the IB-CBT program in regard to depression, time-consumption for feedback to participants and patients perceptions of the IB-CBT-program.

Method: A multi-professional team including a cardiac patient was enrolled in the development of the program. Seven HF patients with depression were recruited to the feasibility study. Patient Health Questionnaire-9 (PHQ-9) and Montgomery Åsberg Depression Rating - Self-rating scale (MADRS-S) were used to measure depression. Interviews were performed to capture patients' perceptions of the program.

Results: Based on research in HF and CBT a nine week program adapted to HF patients was developed including seven modules; introduction, psycho-education, behaviour activation, problem solving and consummation. Participants' median depression score decreased from baseline to the end-of-the study (PHQ-9: 11 to 8.5; MADRS-S: 25.5 to 16.5). None of the participants' depression scores worsened, see figure 1. The therapist used approximately 20 minutes/week per participant for feedback. Patients perceived the IB-CBT program to give them freedom of time and being helpful for learning about what they could do about their health problems. Negative perceptions were that some parts required a lot of reading and work, and technical problems with computers.

Conclusion: The nine week IB-CBT program seems to be a feasible and time-efficient tool to treat depression. However the IB-CBT program needs to be evaluated in a larger randomized study.

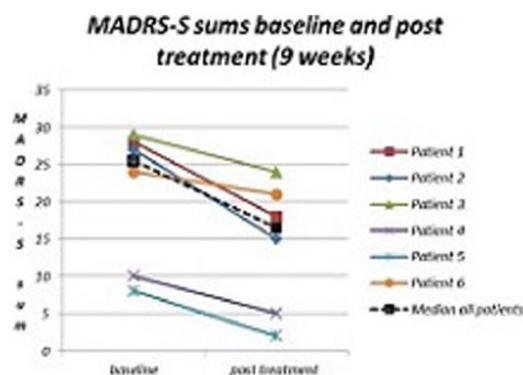


Figure 1.

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The importance of functional family dynamics in coping with acute myocardial infarction

MH Salminen-Tuomaala¹

¹Seinajoki University of Applied Sciences, The School of Health Care and Social Work, Seinajoki, Finland

Purpose: The purpose of the study was to describe the psychosocial coping of myocardial infarction (MI) patients and their spouses at 4 and 12 months following MI. Another aim was to produce new knowledge for nursing staff on patients' and their spouses' experiences of influence of family dynamics on coping.

Methods: Informants were 28 patients with MI and their spouses. Data were collected by themed interviews. Patients and spouses were interviewed separately. The grounded theory method was used to analyse data.

Results: Psychosocial coping can occur as a problem-focused, action-focused, serene, insecure or illness-focused coping process. The functionality of family dynamics, sharing and social support influence on coping of the patients and their spouses. The formation of coping processes is further influenced by causal, contextual, interactional and individual factors. Functional family dynamics includes open communication and sharing experiences and fears. It also includes emotional, cognitive, social and concrete support from the spouse and other family members.

However, it's typical both for the patient and the spouse to have protective interaction with each other. Protective interaction includes avoiding difficult discussion topics, hiding one's fears and pretending that everything is in order. They do not discuss topics which they consider too sensitive, that is the seriousness of the situation, the possibility of death, or their own fears. It would be important to share experiences and get social support from other family members because it could reduce anxiety.

Conclusions: The results can be used to develop the nursing of MI patients and counselling of their family members. The research results will help nursing staff to anticipate and recognise factors that affect MI patients' and their spouses' coping, sense of coherence and management of the situation. The study also produces new knowledge of interaction between MI patients and their spouses, bringing out the importance of functional family dynamics. The findings can help nursing staff to promote patients' and spouses' coping at home, as the results can be used to develop the counselling contents for follow-up care.

The findings can also be utilized in both nursing and public health nursing education programmes and in continuing education.

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Transversal observational study on problems relating to sexuality in patients discharged with a diagnosis of Acute Coronary Syndrome

R Piccari,¹ S Bartolini,¹ M Franchini,¹ A Giannini,¹ L De Lio,¹ S Baldoni,¹ A Terranova¹ and M Ugucioni¹

¹San Camillo Forlanini Hospital, Department of Cardiology, Rome, Italy

Background: After a cardiovascular event patients (pts) and their families often have to cope with many changes in their private lives, caused by the consequences of the disease and its treatment, which can compromise the quality of life. Sexuality is an important aspect that can be adversely affected by a cardiovascular event. Healthcare providers should perform a careful evaluation of sexual function in pts treated with cardiovascular drugs and possibly resort to educational intervention to limit the side effects of therapy, with the aim of improving compliance and quality of life.

Aim: The objective of this study is to detect the prevalence of sexual activity problems in pts diagnosed with Acute Coronary Syndrome (ACS) at 30 days of discharge for the eventual design of an educational intervention.

Method: Observational cross study. During the follow-up visit, the following questionnaires - Arizona Sexual Experiences Scale (ASEX) for the quality of sexual life, Hospital Anxiety and depression Scale (HADS) and the questionnaire on health quality of life (SF-36). where delivered for self-administration to pts discharged with a diagnosis of ACS STEMI and NSTEMI,

Results: Since 1 September to 30 November 2014, 67 pts underwent a cardiological control after discharge from a cardiology hospital. We assessed 47 pts (18 females and 29 males) who agreed to participate to the study. The average age was 60 years (SD±10.96, 29 MIN, MAX 79) there were no significant differences between gender as far as the main socio-economic factors (average age, marital status, level of education, level of education, income, physical activity) are concerned, whereas there was a correlation between the results of the ASEX scale with regards to sex (Pearson correlation coefficient = 0.38, p = 0.008) and to anxiety (Pearson = 0.32, p = 0,03). Indeed, problems related to the sexual sphere were diagnosed in 12 women out of 18, versus 8 men out of 21 (OR = 5.25, 95%CI = 1.47 to 18.77). A state of anxiety was detected in 11 women out of 18, who showed more relevant problems about sexuality (RR = 2.21; 95%CI = 1.12 to 4.36).

Conclusion: Sexuality is an important aspect of the overall quality of life that can be affected by several factors, including drug therapy and psychological state, especially in pts who have had a recent cardiovascular event. The results of this study, although still incomplete, may provide

useful information on the problems to be addressed in a possible intervention of health education with the aim of improving the quality of life for heart pts.

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When the spouses whole world is changed in a split of a second

A Lauberg,¹ B Ahlbom,¹ G Nielsen¹ and L Soeltoft¹

¹Aalborg Universitet Hospital, Department of Cardiology, Aalborg, Denmark

Aim: Previous studies based on spouses to patients that had undergone by-pass surgery (CABS) or had a myocardial infarction, experienced emotional distress after hospital discharge. No previous studies have addressed the issue for spouses of patients that have undergone angioplasty and been diagnosed with ischemic heart disease. (IHD). The study explores how difficulties are experienced by spouses especially focus has been on how they manage every day life.

The aim was to obtain knowledge that would help us to understand the emotional state of mind of the spouses and investigate whether they felt they were sufficiently equipped to support the patient. The study focused on the period immediately after hospital discharge and up to the start of the rehabilitating course.

Method: 8 spouses took part in individual interviews, 4 men and 4 women, in a period from Sep – April 2012 / 2013.

Inclusions criteria: Husband or wife to patients that had undergone angioplasty, been diagnosed (IDH), and await rehabilitating. The interviews were transcribed ad verbatim and analyzed inspired by Ricouer's three text comprising levels: Naïve reading, structural analysis, and critical interpretation and discussion.

Results: 3 categories were established: When the spouse's whole world is changed in a split of a second, the unbearable standstill, and the necessary burden.

The spouse's lacked knowledge about heart diseases, medication, and lifestyle changes to be able to help their partners, they felt left out of the illness process, were anxious, concerned, and were scared if they could act effectively in a serious acute situation. This lead to a feeling of inadequacy i the perioden of waiting for the rehabilitation to begin. In this perioden they feel they have to carry the entire responsibility for the patient's wellbeing.

Conclusion: Without enough knowlegde they impode themselves with a responsibility, which can lead to over-protective care. On the one hand death can be a potential risk and on the other hand a new way of life has to be found. This dilemma is hard for the spouses to cope with.

It is necessary to involve the spouses more, this could be done with a phone call, or an individual interview This

issue should be investigated more so as to find the individual need. It is necessary to involve the spouses even more. This issue should be investigated more so as to find the individual need. Rehabilitation should include the spouses, perhaps a course just for them.

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Sociodemographic factors influencing quality of life of patients with arterial hypertension

K Lomper,¹ A Chudiak,¹ B Jankowska-Polanska¹ and I Uchmanowicz¹

¹Wroclaw Medical University, Department of Clinical Nursing, Wroclaw, Poland

Background: NATPOL 2011 study estimated the prevalence of arterial hypertension in adult Polish population (<80 years of age) at 32%. Only 70% of these cases are detected, and no more than 26% are adequately controlled. Consequently, a large fraction of patients live with inadequately controlled hypertension despite implementation of pharmacotherapy. Inappropriate control of the disease is reflected by poor general status and resultant deterioration of quality of life which is considered an additional therapeutic target.

Purpose: The identify sociodemographic factors that may affect quality of life of patients with atrial hypertension.

Methods: The study included 100 patients (40 women and 60 men) with established arterial hypertension, aged between 38 and 80 years (M = 56.4, SD = 10.7). The patients were treated at the non-public healthcare center. The data on the sociodemographic factors were collected with a questionnaire developed solely for the purposes of this study, and the quality of life was determined with SF-36 generic questionnaire.

Results: Female participants were on average 5.7 years older than the male patients ($p < 0.01$). When the effect of sociodemographic factors was considered, the MCS scores of younger patients (≤ 60 year of age) turned out to be significantly higher than those of the older patients (>60 years of age; 51.9 vs. 48.3, $p = 0.005$). Women were shown to present with lower PCS (43.8 vs. 47.8, $p = 0.044$) and MCS scores (48.3 vs. 51.6, $p = 0.015$) than did the men. Patients with secondary education (52.6) and professionally active persons (51.4) were characterized by higher MCS scores than the subjects with primary (49.4), vocational (48.1) or higher education (49.3), unemployed individuals (47.9) and persons receiving age (42.4) or disability pension (40.3; all differences significant at $p < 0.05$). Finally, the MCS scores of the city- and town-dwellers turned out to be higher than those of the countryside-dwellers (50.0 vs. 46.6, $p = 0.004$).

Conclusion: Sociodemographic factors, such as age, sex, educational level, professional activity and place of

residence, influence quality of life of patients with arterial hypertension.

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Symptoms of stress and fatigue in patients with takotsubo cardiomyopathy

K Ulin,¹ S Wallstrom¹ and I Ekman¹

¹Institute of Health and Care Science, Sahlgrenska Academy, University of Gothenburg, Göteborg, Sweden

Introduction: Stress has been strongly connected to patients with takotsubo cardiomyopathy (TTC). In the acute phase patient with TTC have similar symptoms, such as chest pain and shortness of breath, to those with myocardial infarction. Additionally, patients with TTC have more frequently been diagnosed with anxiety and depression. In regard to the connection between TTC and stress there is a gap in knowledge concerning the association between perceived stress and fatigue during the hospital stay.

Methods: The study was performed in two Swedish university hospitals during the period 2012 to 2014. Twenty participants (1 man and 19 women) answered questionnaires measuring self-reported fatigue and perceived stress during their hospital stay. The Multidimensional Fatigue Inventory (MFI) contains 20 items distributed in five domains; General Fatigue; Physical Fatigue; Reduced Activity; Reduced Motivation and Mental Fatigue and the Perceived Stress Scale (PSS) contains 14 items, which are calculated to a sum score.

Results: Significant correlations were found between perceived stress and three domains of fatigue. The strongest correlation were between PSS and General Fatigue ($p = 0.04$), Physical Fatigue ($p = 0.03$) and Reduced Motivation ($p = 0.03$).

Conclusion: These results indicate that patients with TTC who had high self-reported symptoms of perceived stress have more symptoms of fatigue than patient with less self-reported perceived stress. Health care professionals must be aware of that patients with TTC, who report perceived stress, also may experience severe fatigue. In addition to further investigations of symptoms, we also need to develop appropriate and evidence-based care for patients affected with TTC.

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Impact of implantable cardioverter defibrillator (ICD) on quality of life: croatian experience

A Ljubas,¹ M Lovric Bencic¹ and D Fabijanovic¹

¹University Hospital Centre Zagreb, Cardiovascular disease, Zagreb, Croatia

Introduction: Implantation of cardioverter defibrillator (ICD) is the method of choice in the treatment of malignant life-threatening arrhythmia. Indications for ICD implantation are primary and secondary prevention of sudden cardiac death.

Aim: To investigate the impact of ICD on general health concepts – physical and mental.

Subjects and methods: The study included 60 subjects who underwent ICD implantation, from 2005 to 2012. Their age ranged from 18 to 70 years, 33 (55%) were males and 27 (45%) females. The study used the questionnaire SF - 36. In statistical analysis Wilcoxon signed-rank test was used.

Results: In 44 patients (73%), up to the moment of completion of the questionnaire, ICD was activated at least once. Statistically significant differences in the total sample of subjects from the time before to after ICD implantation were observed in two domains: physical functioning ($p = 0.021$) and limitations in life roles due to emotional problems ($p < 0.001$). There were no statistically significant differences regarding age ($p = 0.993$) and gender of the subjects ($p = 0.995$).

Conclusion: In the investigation of the quality of life a statistically significant impact of ICD implantation on physical activity and emotional and mental components of patients' health was found. The results obtained in this study can be used in providing education and support to the patients and their families.

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Gender and age aspects of patient expectations and healthrelated quality of life before and after coronary angiography for suspected ischemic heart disease

AO Odell,¹ AB Bang,² PA Andrell¹ and LG Grip¹

¹Institute of Medicine at Sahlgrenska Academy University of Gothenburg, Department of Molecular and Clinical Medicine, Gothenburg, Sweden ²School of Health and Sciences University of Borås, Borås, Sweden

Purpose: Patients expectations are patient reported outcome measurements (PROM) which have hitherto rarely been used to design health care processes. To evaluate expectations and health-related quality of life (HRQoL) in patients with suspected CAD at the beginning of a chain of care, whether these expectations are fulfilled, and if the expectations differ with regard to age or gender.

Methods: 544 patients planned for coronary angiography for suspect CAD completed a expectation questionnaires (ExpQ) developed to assess the expectations of treatment and two established HRQoL questionnaires, Short Form 36 and Seattle Angina Questionnaire, at baseline and after six months of follow-up.

Results: Prior to investigation and treatment, patients had high expectations of receiving information, treatment that was required in time, of being well received by medical staff and of feeling safe. There was a positive attitude towards life style changes, medication and participation in decision making regarding their own treatment. Fifty-six point four percent of the patients reported fulfillment of treatment expectations and fulfillment of these related to improvement in HRQoL and lower occurrence of angina pectoris at follow-up. Patients with diabetes and prior bypass surgery reported less fulfillment of expectations. There were no differences in the results regarding gender or age.

Conclusions: The present study highlights the importance of investigating patient expectations and experiences of symptoms prior to coronary angiography and to assess fulfillment of these expectations in order to individualize information, to invite patient participation in the health care process and to evaluate the outcome of the process from a patient's perspective.

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Correlations between sense of coherence and symptoms in takotsubo cardiomyopathy

S Wallstrom,¹ K Ulin¹ and I Ekman¹

¹Institute of Health and Care Sciences, The Sahlgrenska Academy, University of Gothenburg, Gothenburg, Sweden

Background: Takotsubo cardiomyopathy (TTC) is characterized by a reversible ballooning of the left ventricle and symptoms are often described as mimicking those of myocardial infarctions. A presiding stress-trigger, which can be both psychological and physical, can be identified in a majority of cases. Prior diagnosis of depression or anxiety is a risk-factor for TTC. Despite the strong connection to psychological factors, knowledge of how they are related to symptoms is lacking.

Aim: To investigate the connection between Sense of Coherence (SOC) and symptoms during the hospital stay in patients with TTC.

Methods: In total 20 patients with TTC residing in western Sweden were included during 2012-2014. The Somatic Health Complaints Questionnaire (SHCQ) and the 13-item version of the SOC questionnaire were distributed, both are validated. SHCQ measures frequency of 13 symptoms common in patients with heart disease. Total SOC as well as its three dimensions: comprehensibility, manageability and meaningfulness were measured. Statistical significance was tested using Pearson Correlation.

Results: Prevalence of symptoms not usually associated with TTC, such as sweating, sleep disturbance, weakness and lack of energy, were found. Negative correlations were found between different aspects of SOC and

various symptoms. Comprehensibility was correlated to sweating ($p = 0,047$) and sleep disturbance ($p = 0,050$); manageability to sleep disturbance ($p = 0,009$) and weakness ($p = 0,033$); meaningfulness to weakness ($p = 0,010$), lack of energy ($p = 0,003$) and stomach trouble ($p = 0,037$); and the total score of SOC was correlated to sweating ($p = 0,048$), sleep disturbance ($p = 0,013$) and lack of energy ($p = 0,022$).

Discussion: Frequency of symptoms is related to by both total SOC and its dimensions. The results show that patients with TTC, who have a lower SOC report more symptoms than those with a higher SOC. Health care professionals should be aware of that frequency of symptoms in patients with TTC may be affected by psychological factors, such as SOC.

Prevention and rehabilitation from knowledge to practice

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Effect of acceptance of the disease on quality of life of patients with hypertension

B Jankowska-Polanska,¹ A Ilko¹ and I Uchmanowicz¹

¹Medical University of Wroclaw, Health Science Faculty, Wroclaw, Poland

Introduction: Hypertension is the most common cardiovascular disease and is associated with numerous diagnostic and therapeutic problems. Common side effects may affect the functioning of human life and as a result, the assessment of quality of life and acceptance of the health situation can be a very important issue. In the available publications, the authors point to a relationship between acceptance of illness and quality of life (Quality of Life-QoL) in chronic diseases. There are only few studies on the acceptance of the disease in hypertension.

Purpose: To evaluate the relationship between the degree of acceptance of the health situation and the QoL of patients with hypertension, and to determine which of the characteristics of socio-demographic and clinical factors have an influence on the acceptance of the disease.

Methods: Study was conducted with WHOQOL-Bref questionnaire and the scale of acceptance of the disease (Acceptance of Illness Scale-AIS). The study included 105 patients hospitalized with an exacerbation of hypertension in the Department of Angiology, Hypertension and Diabetology at a university hospital. Patients were divided into three groups, depending on the AIS results: I group (8-18 points in AIS scale)- lack of acceptance of the disease, II group (19-29 points in AIS scale) the average level of acceptance, III group III (30-40 points in AIS scale) acceptance at a good level

Results: In all four domains of the WHOQOL Bref questionnaire QoL strongly correlates with the level of acceptance of the disease ($p < 0.001$). The level of QoL increases with the level of acceptance of the disease (AIS). For all four domains of WHOQOL-Bref questionnaire we have recorded the highest scores of QoL in patients with good acceptance of the disease: in somatic domain: 62.2 ± 14.2 gr. III vs 51.9 ± 15.7 group II and 37.9 ± 23.7 in Group I; psychological domain: 73.6 ± 13.1 gr III vs 61.0 ± 15.7 in group II and 52.6 ± 20.4 in group I; Social domain: 76.7 ± 12.0 gr III vs 65.1 ± 21.8 in group II and 55.4 ± 26.8 in group I; environmental domain: 72.3 ± 12.1 vs 60.1 ± 14.3 in group II and 49.1 ± 18.7 in group I. We observed statistically significant ($p < 0.05$) negative correlation between the number of comorbidities, the amount of checkup visits and the amount of medication during the day and the acceptance of the disease.

Conclusion: Acceptance of the disease positively affects the quality of life of patients with hypertension. Acceptance of the disease negatively affects the number of comorbidities and polypharmacy.

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Heart shaking transitions - a phenomenological-hermeneutic study of patients' experiences in cardiac rehabilitation

C P Simony,¹ P S Dreyer,² B D P Pedersen³ and R B Birkelund⁴

¹Aarhus University, Section of Nursing Science, Aarhus, Denmark ²Aarhus University Hospital & Institute of Health, Section of Nursing Science, Aarhus University, Aarhus, Denmark ³Faculty of Health Sciences, University of Southern Denmark, Research Unit of Nursing, Odense, Denmark ⁴Lillebaelt Hospital, Section of Health Services Research / University of Southern Denmark, Vejle, Denmark

Purpose: To improve the cardiac care and especially the cardiac rehabilitation, the patients' perspectives should be better addressed. According to the National Danish Heart Plan for patients with unstable angina pectoris or non-ST-elevation myocardial infarction specialized out-patient cardiac rehabilitation during 1-2 months is offered after the acute treatment. Knowledge of the patients' experiences of cardiac problems when receiving the current standards of treatment is needed in order to develop sufficient care.

Hence the aim was to investigate how patients with new onset unstable angina pectoris or non-St-elevation myocardial infarction experience their life situation.

Methods: Within a phenomenological-hermeneutic frame a qualitative design was chosen. Introductory field observations were made. Focus group interviews and individual interviews were conducted with 11 patients enrolled in the cardiac rehabilitation programme. The data underwent interpretation consisting of three phases: naïve reading, structural analysis and comprehensive interpretation.

Results: The preliminary findings are that the patients go through a Heart Shaking Journey in Cardiac Rehabilitation. Three themes emerged: Hard to accept the disease: facing the disease is a difficult surrender to the patients, leading to vulnerability and helplessness; Understanding that life has become frail: patients feel shaken in an existential way as they realize that the disease is chronic and life-threatening; An altered Life: patients need to adjust towards limitations in their everyday life.

Conclusions: Patients experience various demanding transitions when they are afflicted by heart disease. They are forced to realize that they besides surviving an acute life-threatening event are also suffering from a chronic severe disease which brings sweeping changes in their lives. Hereby the patients are challenged during the trajectory of cardiac rehabilitation. Care towards the integrity, which becomes vulnerable in these processes, is essential in order to support the cardiac patients to gain healthy transitions. Being together with peers in cardiac rehabilitation is found as a supportive facilitating factor towards the transitions. Therefore peer support seems to be an important factor which should remain in the future CR.

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An experience-based co-design to accomplish person-centered self-care support for elderly persons with heart failure

A Nygardh,¹ J Martensson,¹ H Allemann,² A Stromberg,² J Aidemark,³ C Fruberg,⁴ J-E Karlsson⁵ and L Askenas³

¹Jonkoping University, Department of Nursing, Jonkoping, Sweden ²Linkoping University, Department of Medical and Health Science, Linkoping, Sweden ³Linneaus University, Department of Informatics, Vaxjo, Sweden ⁴Qulturum, Centre for Learning and Innovation in Health Care, Jonkoping, Sweden ⁵Ryhov county Hospital, Department of Development (Qulturum), Jonkoping, Sweden

Introduction: Self-care refers to activities performed with the intention of improving or restoring health and well-being. A good understanding of the adaptations needed in daily life is a prerequisite to motivate individuals to implement such changes. Facilitating the person with heart-failure's (HF) understanding of the diagnosis, how to handle symptoms, and when to seek healthcare, is one way of proactive self-care. Previous Information and communication technology (ICT) support has proved to be effective in younger patients, but the development has not been user-driven, i.e. involving references and experiences from the patient, their family members or healthcare professionals and have rarely been implemented in clinical practice. In addition, disregard of the user hands over control and responsibility to the healthcare professionals and misses the patient's desires and requirements.

Aim: To describe an experience-based co-design of ICT for self-care support in the context of heart failure care

Methods: The steps in the process of developing ICT support programs for self-care were guided by an experienced based co-design methodology including: 1) Workshops regarding self-care needs. 2) Workshops regarding self-care support as a means to cope with the phases of the disease. 3) Workshops to assess the usability of the suggested ideas. 4) Workshops to test the different supports in action. The project involved older persons with HF, their family members, healthcare professionals, IT-developers, informatics, development leaders, and researchers. There was also a quality improvement process involved to improve working routines and communication between the person with HF and the healthcare professionals, which in turn, increases the value of the innovation. Data collection include tape- and video recorded workshops and diary notes supplied by the informants. All data are to be analyzed by content analysis to identify needs, opportunities and challenges of self-care.

Results and conclusion: This design was found to be a useful method for finding and assess usability of person-centered self-care ICT support. To involve users in the development of self-care support has improved the opportunities to realize support needed. Sharing these perspectives increases professionally and organizationally learning in order to accomplish person-centered self-care. Preliminary findings show that ICT will be a part of solving some of the self-care needs described by patients, family member and health care providers and the next step in the project will be to test and adapt these tools.

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Assessing publics' knowledge about hypertension in a community dwelling sample

N F Eshah¹ and L Aldaken¹

¹Zarqa University, Faculty of Nursing, Zarqa, Jordan

Background: Hypertension is one of the major risk factors for cardiovascular diseases that affect a high proportion of people worldwide. Understanding peoples' levels of knowledge about hypertension might contribute effectively to nurses' efforts to prevent, treat, and control the disease.

Objective: Identifying the levels of knowledge about hypertension disease among adults, and identifying differences in knowledge about hypertension based on sociodemographic and clinical variables.

Methods: A convenience sample was used in this descriptive comparison design as was the Hypertension Knowledge-Level Scale, which measures six dimensions of knowledge about hypertension (definition, treatment, drug compliance, lifestyle, diet, and complications).

Results: There were 284 participants with a mean age of 48.7 years; 44% were in the 46–60 age group, with a

mean total knowledge about hypertension is 73.65%. Participants had higher levels of knowledge about lifestyle, and complications; lower scores were recorded for definition of hypertension, and relationship between diet and hypertension. Participants with higher education levels, who watched health programs, exercised regularly, visited their doctors regularly, and diagnosed with other chronic diseases, had greater knowledge about hypertension.

Conclusion: Although the total level of knowledge about hypertension is good among participants, greater effort is needed to improve the level of knowledge about diet, definition of hypertension, and drug compliance. Sociodemographic and clinical variables have significant relationships with levels of knowledge about hypertension. This necessitates the importance of considering patients' characteristics when designing and providing health educational programs. Nurses in the field are in the best position to improve peoples' knowledge and awareness about hypertension disease. They should apply effective interventions that focus on preventing, treating, and controlling this disease. Health care providers should have the desire and motivation to provide information about hypertension, risk factors, treatment regimens, complications, and how to live healthy and control the disease.

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Analysis of risk factors of cardiovascular diseases among patients hospitalized on surgical wards in relation to the different age groups.

A Koltuniuk¹ and J Rosinczuk¹

¹Wroclaw Medical University, Department of Nervous System Diseases, Department of Clinical Nursing, Wroclaw, Poland

Background: Cardiovascular diseases (CVD) are the leading cause of mortality of the adults in Poland. A number of risk factors has significant influence on CVD incidence. Early identification of risk factors related to our lifestyle facilitates taking proper actions aiming at the reduction of their negative impact on health.

Aim: Determine the prevalence of risk factors among patients hospitalized on surgical wards and the relation between the age and the presence of these factors.

Material and Methods: The study was conducted among 420 patients. The author's self-designed questionnaire and the International Physical Activity Questionnaire, the Beck Depression Inventory, the questionnaire assessing diet by Starzyńska, Michigan Alcoholism Screening Test, Inventory Mini Coop and SCORE scale was used to collect data in the study. Furthermore, all patients went through blood pressure check as well as anthropometric and biochemical tests. A statistical analysis of the material has been performed.

Results: Analysis of the collected data revealed: improper diet among 95% of patients, but the persons up to the age of 35 significantly more often received a higher number of points (questionnaire by Starzyńska) than other respondents ($p = 0.017$); excess body weight among 62% of patients, often in the age group 50-64 years old than in the group 18-35 ($p < 0.001$) and 36-49 ($p < 0.001$); prevalence of abdominal obesity among 63% of respondents, less frequently in the age group up to 35 years than in other age groups ($p < 0.001$); low physical activity among 21% of patients; smoking among 20% of respondents, less frequently in the age group over 65 years than in other age groups ($p = 0.001$); alcohol abuse among 11% of patients; prevalence of depressive episodes of mild nature in 8%, often in the age group of 65 and more than in other age groups ($p < 0.001$); high blood pressure among 28% of patients, often in the age group 50-64 and 65 years old and older than in the group up to 35 years old ($p = 0.002$ and $p < 0.001$); raised level of total cholesterol among 30% of patients, often in the age group 36-49 than 18-35 years old ($p < 0.001$) and 65 or above ($p = 0.026$).

Conclusions: Patients in the age group above 35 years old are prone to develop CVD due to the diagnosed multiple risk factors.

Despite their young age, more than 90% of patients in the age group up to 35 have improper diet. Most likely it is related to the lack of time for the regular consumption of nutritious meals.

Unfortunately, despite numerous anti-smoking campaigns every third respondent in the age group up to 35 and one fifth in a group of 36-49 and 50-64 still smoke.

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Effective components of nurse-coordinated care to prevent recurrent coronary events: a systematic review of randomized controlled trials.

M Snaterse-Zuidam,¹ JTP Dobber,¹ P Jepma,² G Terriet,³ RJG Peters⁴ and WJM Scholte Op Reimer¹

¹Amsterdam University of Applied Sciences, School of Nursing/Academic Medical Center, Amsterdam, Netherlands ²Amsterdam University of Applied Sciences, School of Nursing, Amsterdam, Netherlands ³Academic Medical Center of Amsterdam, General Practice, Amsterdam, Netherlands ⁴Academic Medical Center, University of Amsterdam, Department of Cardiology, Amsterdam, Netherlands

Background: Current guidelines on secondary prevention recommend nurse-coordinated care (NCC) as an effective intervention. However, successful components have not been studied.

Purpose: To estimate the effects of NCC components in secondary prevention of coronary heart disease (CHD) by means of a systematic review and meta-analysis of randomised trials comparing NCC with usual care.

Results: Eighteen randomised trials (11,195 patients in total) using 15 different components of NCC met the

inclusion criteria. Components of NCC were categorized in three main strategies: 1) risk factor management; 2) multidisciplinary communication, and 3) shared decision-making. Six trials combined all three NCC strategies. In total, 30 NCC outcomes were measured. We summarized observed outcomes in four categories: 1) risk factor levels 2) care processes 3) patient received health and 4) clinical events. Nurse-coordinated medication management and smoking support were the most effective components after 1 year. NCC lowered SBP [weighted mean difference (WMD) -2.98 mmHg; 95% CI -4.09 mmHg, -1.88 mmHg] and LDL cholesterol (WMD -0.26 mmol/L; 95% CI -0.32 mmol/L, -0.20 mmol/L). NCC increased the smoking cessation rate by 25% (Risk ratio 1.25 (1.08, 1.43)).

Conclusions: Compared to usual care, NCC helps CHD patients quit smoking and improves blood pressure and LDL-cholesterol levels. Furthermore, NCC showed to be a heterogeneous concept. A shared definition of NCC may facilitate better comparisons of content and outcomes.

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Attitudes towards sex education in post myocardial infarction patients

R Evacic¹

¹Opca Bolnica "Dr. Tomislav Bardek", Služba za internističke djelatnosti, Koprivnica, Croatia

Purpose: The aim of the study is to determine if the patients would like to be given information about their sexual possibilities after myocardial infarction, while being given the information about their therapy and necessary lifestyle changes.

Methods: 58 patients, who had a myocardial infarction and no problems with sexual function prior to that, were given a simple questionnaire which consisted of 7 questions.

Results: 39 male and 19 female patients participated in the study. 83% of patients were never given any advice about their sexual life and possibilities after myocardial infarction. 93% of them would like to be given the information regarding their sexual possibilities alongside the information about their therapy and necessary lifestyle changes. Out of 17% of patients who were given some information about their sexual possibilities, 66% of them thought that the information were not good, clear nor satisfactory. 53% of patients would like to get information about the sexual possibilities from their cardiologist, 36% opted for a nurse, while 11% of them thought that their family doctor would be most suitable. 53% of patients tried to attain information from other sources such as the internet, magazines, television, etc. 79% of patients would like their life partners to participate during consultation about their therapy and necessary lifestyle changes.

Conclusion: The study showed that 93% of the patients who joined the research wanted to get the information about their sexual life and possibilities after having a myocardial infarction.

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Effect of age on the phenotype of metabolic syndrome in developing country

M Gharipour¹ and M Sadeghi¹

¹Isfahan Univ. of Medical Sciences, Cardiovascular Research Institute/ Cardiovascular Research Center, Isfahan, Iran (Islamic Republic of)

Background: This study aimed to determine how age groups effect on the phenotype of metabolic syndrome (MetS) among Iranian population.

Methods: This cross-sectional study was conducted as part of Isfahan Healthy Heart Program. Height, weight, waist circumference, and blood pressure were measured by trained health-care professionals. MetS was defined as having three or more of the National Cholesterol Education Program III criteria. The relation between different age groups and different phenotypes of MetS was examined using the multinomial logistic regression.

Results: We found low high-density lipoprotein-cholesterol (HDL-c) was the most common feature, followed by hypertriglyceridemia (HTG), abdominal obesity (ABO), hypertension (HTN), and high fasting blood glucose in decreasing order of prevalence. The most prevalent combination of MetS components was hypertriglyceridemia, low HDL-c and ABO (50.7%) in all subjects and especially in younger age group (63.2%). In elder age group, the most prevalent three components combination was HTG, Low HDL-c and HTN (43.9%). Logistic regression analysis demonstrated that elder subjects were at approximately 12 times higher risk of having the combination HTG, ABO, low HDL-c, and HTN ($P < 0.001$) compared to the middle age subjects who had a lower risk for the same combination; (2 [1.49-3.49]) ($P < 0.001$).

Conclusion: This study provides a nationally representative estimate of the prevalence of different phenotypes of MetS across different age groups. Regarding different phenotypes of MetS in various age groups need to have important implications in the clinical management of these patients and the implementation of public health.

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Transfusion reaction rate in cardiology and ways of reducing risk

I Matic,¹ B Golubic Cepulic² and I Bojanic²

¹School for Nurses, Mlinarska, Zagreb, Croatia ²University Hospital Centre Zagreb, Zagreb, Croatia

Purpose: In the past decade, certain changes have been introduced in the production of blood elements which are used in a clinical hospital center. The majority of changes are related to the semi-automatic method of production and filtration of blood elements. The aim of this research was to determine the effect of implementation of universal leukofiltration of blood elements which are produced by semi-automatic method on the appearance of transfusion reactions.

Methods: A three-year period has been retrospectively analyzed before and after the implementation of change in the production method of blood elements in regards to transfused doses, that is, transfused patients and reported reactions.

Results: The pooled risk ratio of a reaction to red blood cell was 0,40 (95% CI, 0,30–0,52) suggesting lower reaction rates ($p < 0,05$). Reported allergic reactions to red blood cell decreased from 0,06% to 0,02% ($p < 0,05$). Reported febrile nonhemolytic transfusion reaction decreased from 0,17% to 0,04 ($p < 0,05$). For platelet components difference in reaction rates was significant and pooled risk ratio was 0,32 (95% CI, 0,23-0,45). Febrile nonhemolytic transfusion reaction decreased from 0,25% to 0,02% ($p < 0,05$).

Conclusion: Blood components produced using semiautomated productions methods and universal leukofiltration resulted with significant lower reaction rate.

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Obesity and abdominal obesity in patients after myocardial infarction: data of 5-years prospective study

L Yushchuk¹

¹Lutsk City Hospital, Interventional Cardiology, Volyn Regional Center of Cardiovascular Diseases, Lutsk, Ukraine

Objectives: Obesity and abdominal obesity (AO) – ones of main risk factors of CVD. Theirs active modifying could lower cardiovascular mortality (CVM) that's very high in Ukraine.

Design: Secondary prevention assessment was performed in 333 patients (pts) (mean age $62,5 \pm 9,8$ years, 234 M) randomized from 912, discharged after myocardial infarction (MI) a hospital. The home-based questionnaire, anthropometric, blood pressure measurements and laboratory tests were performed.

Results: 58,0% postMI pts had AO, 44,7%– obesity. It's in order that AO prevalence was higher in obese pts (89,9%) vs pts with normal weight (14,9%) ($p < 0,0001$).

But 15% pts with normal weight had AO too. Obesity and AO prevalence was higher in female vs male (63,6% vs 37,2% ($p < 0,001$) and 82,8% vs 47,6% ($p < 0,001$), in single vs married (68,1% vs 54,6%, $p = 0,04$). There's no difference in obesity and AO dependently of education, income, working status. Only 26,7% pts with obesity and AO tried to lost weight. This was associated with misunderstanding of obesity and AO as a problem. 5-years prospective observation demonstrate that CVM was higher in pts with severe obesity (53,8%) and underweight (100%) vs other ($p = 0,004$).

Conclusions: prevalence of AO and obesity after MI is high, theirs correction – insufficient. Remote prognosis after MI is worse in pts with severe degree obesity and underweight.

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The role of surveillance by expert staff in cardiac rehabilitation: pilot documentation system

R Gallagher,¹ J Smith² and H Hartney²

¹University of Sydney, Sydney Nursing School, Charles Perkins Center, Sydney, Australia ²Nepean Hospital, Sydney, Australia

Purpose: Cardiac rehabilitation (CR) effectively improves clinical outcomes for patients following cardiac events. However, the role of surveillance and timely intervention by expert CR staff has not been investigated and may be a vital component of CR success. This study reports on a pilot system to document and determine the frequency of CR surveillance outcomes including detected clinical issues and actions

Methods: A documentation system for CR staff-detected clinical incidents and related actions was developed and integrated into CR patient records. Following implementation an audit for 12 months of patient records of incidents and actions was conducted and classified by an independent reviewer.

Conclusions: Patients ($n = 260$) commencing CR had a mean age of 63.45 years (SD 11.33), were mostly male (76.2%) and index diagnosis of percutaneous coronary intervention (35.4%), myocardial infarction (32.7%) and/or coronary artery bypass graft surgery (CABG, 20.5%). A total of 93 clinical incidents were documented in 29.6% of the patients, with 5% having > 1 . Documentation was consistent, with no differences occurring for time. The most common incidents related to depression (31.1%), blood pressure (27.9%) and diabetes (11.8%). The odds of a patient having a clinical incident were increased if CABG (Odds Ratio [OR] 2.80, 95% Confidence Interval [CI] 1.33 – 5.89), higher depression score (OR 1.18, 95% CI 1.15 – 1.26) or diabe-

tes (OR 2.29, 95% CI 1.08 – 4.51). The most common action was referral to the local physician (58.1%), cardiologist (16.1%) and diabetes education (11.8%), and 7.5% required a medical emergency call or transfer to the emergency department. The documentation system highlighted that clinical incidents are common in CR and actions often required, emphasising the important role of surveillance by expert staff.

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The association of plasma Omega-3 to Omega-6 Polyunsaturated Fatty Acid Ratio with subclinical atherosclerosis in different generations without DM

Y Suzuki,¹ S Murase,¹ O Matsuda,¹ A Murata,¹ M Ehara¹ and T Ito¹

¹Nagoya Heart Center, Nagoya, Japan

Objective: Eicosapentaenoic acid (EPA) of the omega-3 polyunsaturated fatty acids (ω -3 PUFA) family plays important roles in the prevention of cardiovascular disease (CVD), while, arachidonic acid (AA) of the ω -6 PUFA family promotes inflammatory and prothrombotic influences. However, there have been few reports investigating the relationship between plasma EPA/AA ratio and the prevalence of coronary atherosclerosis in multi-slice CT (MSCT) study. The aim of this study was to investigate the association between the plasma EPA/AA ratio and the prevalence of subclinical atherosclerosis in different generations without DM.

Methods: This study consisted of consecutive 230 suspected coronary artery disease (CAD) patients from 40's- to 70's-year-old underwent 128-MSCT. They all were non-DM patients without any lipid-lowering intervention. To examine the plasma fatty acid level, blood samples were obtained. We investigated the prevalence of coronary plaque based on MSCT findings and patients were divided into different generations (40's; $N = 31$, 50's; $N = 48$, 60's; $N = 72$, 70's; $N = 79$). We investigated the association between the plasma EPA/AA ratio and the prevalence of subclinical coronary atherosclerosis.

Results: The results are shown in the table. The plasma EPA/AA ratio was significantly higher in the older generation. In all generations except 70's, the plasma EPA/AA ratio was significantly lower in the patients with coronary artery plaque. The ROC analysis showed the cut-off value of the plasma EPA/AA ratio, sensitivity, and specificity as shown in the table.

Conclusion: In non-DM young patients with suspected CAD, the low plasma EPA/AA ratio was significantly associated with a high prevalence of subclinical coronary atherosclerosis.

Table. (abstract 149)

group	40's	50's	60's	70's	p-value
age	45.1±2.7	54.3±2.8	64.7±2.7	74.0±2.9	<0.001
male, %	54.8%	62.5%	43.1%	55.7%	<0.05
EPA/AA	0.30±0.20	0.36±0.22	0.49±0.36	0.52±0.33	<0.05
Agatson score	9.2±35.6	65.9±172.7	135.3±316.4	291.9±612.2	<0.05
plaque, %	16.1%	56.3%	61.1%	77.2%	<0.001

	plaque (+)	plaque (-)	p-value
40's EPA/AA	0.23±0.12	0.31±0.21	<0.05
50's EPA/AA	0.30±0.16	0.42±0.25	<0.05
60's EPA/AA	0.41±0.35	0.54±0.36	<0.05
70's EPA/AA	0.51±0.22	0.52±0.36	NS

	40's	50's	60's
cut off value	0.20	0.28	0.37
sensitivity	69.2%	63.0%	65.9%
specificity	80.0%	61.9%	64.3%

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Alternatives in the closures of sternotomies traditional

M L Diez Herranz,¹ ML Diez Herranz,¹ JM Moreno Diez,¹ P Moreno Diez,¹ MC Barquero Vargas,¹ M Barquero Vargas,¹ MC Barquero Vargas¹ and JJ Arias Puertas¹

¹University Hospital Virgen De Las Nieves, Granada, Spain

Introduction: The closure of sternum is one of the phases of surgical intervention that it can bring about serious complications for patient as well as mediastinal infections, dehiscence, reoperations, increased hospital stays and rehospitalization for sternal problems. To solve these problems come out new techniques on the sternotomy's closure

Materials and methods: It has appeared metal staples of nitinol (nickel-titanium), whose characteristics and properties are: thermoreactive memory effect, do not interfere with CT or MRI, not osseointegrated, cardiac massage can give no Sternal involvement, less pain

The material: staples, sternal thickness gauge, slide and short staple, hot and cold serum.

The technique is simple. The intercostal spaces where they will set are drilled, the sternal thickness to the size of the staple is measured, the staple is introduced into cold serum to make it malleable, and is placed with its holder, finally hot serum is brought to to recover his memory and fix the sternum.

It is made a random sample: 15 patients with a traditional sternal closure and 15 patients with staples sternal closure, in both cases there were 10 men and 5 women. The average age was 70 years old.

Objectives: Our work is about checking out if patients whose sternal closure with staples has the same issues than different systems of closure in other patients or even minor.

Results: Patient had sternal dehiscence in the first sampling and none in the second.

Conclusions: There are complications's sign in the first sampling, although the sample is not large.

The easiness of deployment and reduced complications makes that staples are an effective alternative of sternal closure in patients undergoing cardiac surgery.

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A case report of a patient with sleep-disordered breathing and developed severe cardio respiratory condition, treatment and outcome

A Sajnic,¹ M Pavletic,² S Sepec¹ and A Ljubas²

¹University Hospital Centre Zagreb, Clinic for Pulmonary diseases Jordanovac, Zagreb, Croatia ²University Hospital Centre Zagreb, Clinic for Heart and Blood Vessels, Zagreb, Croatia

Introduction: A common form of Sleep-disordered breathing (SDB) is Obstructive sleep apnea (OSA), and

the prevalence is estimated to be 6% in adults, but 75% are still undiagnosed. Specific cardiovascular outcomes and all-cause mortality are linked to OSA. By early symptom identification, the nurse can contribute to a timely diagnostics and treatment of cardiovascular and pulmonary patients.

Case report: 44 years old male routinely admitted in September 2012, in a clinic for pulmonary diseases, due to diagnosis procedure SDB in sleep laboratory, where severe degree of OSA was diagnosed (Apnea-Hypopnea Index (AHI) 95, minimum SpO₂–20%). The patient was admitted in the intensive care unit (ICU) because of severe cardio respiratory condition (hypercapnic respiratory failure, signs of pulmonary heart). Treatment and health care plan in the ICU management of the patient was monitoring of vital functions, adequate use of drug therapy (prophylaxis with low molecular weight heparin, ACE inhibitors in low doses), venipuncture due to the secondary polycythemia, oxygen therapy, non-invasive mechanical ventilation (NPPV) and reductive diabetic diet. Sleep technician/nurse in collaboration with the nurses from the ICU provides training on ventilation support (BiPAP). After stabilization of cardiopulmonary condition (no need for oxygen therapy), control polysomnography (PSG) test confirms a severe degree of OSA. Second night, we conducted the PSG test with an APAP device, and confirmed excellent efficiency. Recall appointments and clinical management follows patient's condition. Control PSG testing confirms the excellent efficiency of APAP device for the treatment of OSA and improvement of cardio respiratory status.

The questions are: 1.) How many patients undiagnosed and unrecognized is in our clinics for cardiovascular diseases in Croatia? 2.) How can a medical nurse help in early identification of SDB and prevent cardiovascular complications?

Aim: Clinic for cardiovascular diseases conducted Epworth test to see how many patients with cardiac disease has a probability of SDB.

Conclusion: Thanks to an excellent co-operation between clinic for heart and blood vessels and the clinic for pulmonary diseases with the aim of providing a higher quality of health services this research study was conducted. In this paper we demonstrate the link between heart and lung disease, and enable the guidelines for better identification of risk factors for cardiovascular diseases. In the treatment of each patient we demonstrate our expertise if we apply a multidisciplinary approach.

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Screening of cardiovascular risk in female adolescents from vocational high school of state government

V De Freitas Marcolla,¹ G Carvalho,¹ IPB Aragao,¹ M Canedo,¹ CGM Amorim,¹ NR Ferreira,¹ GG Rosario,¹ VMS Pereira,¹ ER Santos¹ and IM Brito¹

¹Governo do Estado do Rio de Janeiro, Rio de Janeiro, Brazil

Background: Coronary heart disease (CHD) may be clinically different in women when compared to men and, consequently, being underdiagnosed and under treated. Worldwide, heart disease and stroke are the leading cause of death in female gender with 8.6 million deaths per year, as mentioned by literature. The presence of risk factors in childhood and adolescence has been configured with a strong predictor of cardiovascular disease in adulthood.

Methods: This study aims to investigate the entire group of female adolescents from a vocational public high school. Observational and cross-sectional study of cardiovascular and stroke risk factors prevalence in all of female teenager population through an one-minute and anonymous questionnaire with 30 closed questions on self-knowledge of risk factors and cardiovascular health. The survey was performed with questions of fast answers, like yes or no, about age, stress level, tobacco smoke, hypertension, dyslipidemia, physical inactivity, obesity, diabetes and family history of CHD. Period: between 05/08/2013 and 10/11/2013. A positive answer or the lack of knowledge are equivalent to a point. Those adolescents who have had two or more positive answers or the lack of knowledge of any item were encouraged to complete the risk assessment in a healthcare unit as they were considered to be in a high risk group. The study population consisted of three hundred young women, 82% adolescents aged between 15 and 17 years.

Results: Tobacco use was found in 9% of this group; hypertension in 3,5% ; 36% have already measured cholesterolemia (7% with >200 mg/dl, 59% and 87% did not know the blood level of total and HDL cholesterol, respectively); 76% have already measured glycemia (79% denied being diabetic and 30% unaware their condition); there were 20% of family history of CHD and stroke; 59% did not know the body mass index (BMI), after it was calculated 71% with BMI ≤25, 21% >25 and ≤30, 8% >30; 72% physical inactivity; 92% denied previous CHD. It was established that 97% of the interviewed adolescents obtained ≥2 positive answer or the lack of any item. It was observed that most of them used to visit the gynecologist (98%) but in contrast only 2% did it to a cardiologist. About three quarters of the interviewed female teenagers demonstrated high cardiovascular risk factors prevalence by achieving ≥2 positive answers or ignoring the answer of any of the question and high stress level activity.

Conclusion: They must be warned and encouraged to complete their risk assessment in a healthcare unit.

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The role of the hereditary factor in the remote outcome of the postinfarction atherosclerosis

O Akulova¹

¹Tyumen State Medical Academy, chair of clinical disciplines, Tyumen, Russian Federation

Purpose: Numerous researchers proved undoubted influence of heredity on emergence and development of ischemic heart disease (IHD). However, we haven't met the researches revealing connection of the burdened heredity with the current of IHD and its outcomes. Therefore we have aimed at estimating the influence of the burdened heredity (H) on the remote survival after the first myocardial infarction (MI).

Research techniques: 232 men have been supervised after the first MI, median age - 48,6±5,52 years. The H factor has been admitted in cases of sudden death, strokes, myocardial infarctions, Angina pectoris at first degree relatives (parents, brothers and sisters, children) among women aged till 60 years, among men - aged till 50 years. Patients were randomized in 2 groups: 1- patients with existence of H factor, 2 -with the lack of H factor. In each group death cases from a cardiovascular disease, a supervision median - 116,4 months (9,7 years), the maximum-170 months (14,2 years) have been registered. Data have been processed by Statistica 6.0 program with application of Pearson criterion (the X-square (χ^2)), Student criterion (t), the relative risk indicator (RR).

The received results: The first group - 92 persons (39,7%), average age - 48,13 years; the 2nd group - 140 people (60,3%), average age - 49,2 years. At the end of supervision term 108 people (46,6%) died of a cardiovascular disease, 124 persons (53,4%) survived. 1 group - 43 people died, a lethality - 46,7%, middle age - 49,2 years; 2 group - 65 people died, a lethality - 46,4%, middle age - 49,5 years (t = 0,0001, P = 1,000). The reliable interrelation between H and the remote lethal outcome of a postinfarction atherosclerosis has not been established ($\chi^2 = 0,008$, P = 0,930). However, RR failure in H group, depending on age, has been doubtfully changed: the emergence of MI at the age of 49 years and above increased the risk of death to 1,04 in comparison with the group of 48 years and below (RR: 1,04; 95% of confidential interval: 0,137-0,788).

Conclusions: The burdened heredity has no reliable impact on the remote survival after the first myocardial infarction and is not a reliable factor of forecasting the remote outcome of the postinfarction atherosclerosis.

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Physiotherapy in patients connected to support extracorporeal membrane oxygenation (ecmo)

A Skendrovic,¹ A Kraljevic¹ and D Javor¹

¹University Hospital Center Zagreb, Department of Rheumatic Diseases and Rehabilitation, Zagreb, Croatia

In a significant number of chronic heart failure patients with optimal conservative therapy progresses to the stage of circulatory shock. The application of mechanical circulatory support may temporarily cared for such patients to recovery of organs or definitive care ("bridge to transplant").

ECMO support system for cardiac patients in acute heart failure and cardiac arrest are placed in the last two years and intensivists - cardiologists in the Department of Cardiac Intensive treatment and transplant cardiology of a university hospital center. In the period since 2012. Years so far set up 22 AV ECMO support system in our patients.

The physical therapy interventions are performed in all patients regardless of ventilation support. Patients who are on ECMO support and invasive mechanical ventilation, from the physical therapy procedures performed: positioning, facilitation of inferior, costal and segmental breathing and coughing, interventions for the elimination of secretion, facilitation of normal movement in order to prevent the occurrence of pneumonia and other complications of prolonged lying. Patients who are on ECMO support, and are not sedated and mechanically ventilated, respiratory physiotherapy carried out with the aim of eliminating secretions and maintaining a patient airway with the help of manual techniques, positive pressure therapy in expiration with or without vibration (PEP therapy) as well as methods of early mobilization of the patient. Proper positioning of the patient and early mobilization has an important role in the transport of oxygen, which acts to improve the alveolar volume, ventilation, perfusion and diffusion and reduces airway resistance. Active communication and collaboration with the patient carried the mobilization and facilitation of normal movement which promotes and maintains the alignment of the hull.

Clinical research involving 100 patients who underwent treatment by ECMO support (circulatory and respiratory) in the treatment of which were included experts from interdisciplinary team; doctors, nurses, perfusionists, physical therapists, respiratory therapists and occupational therapists proves that the effects of the implementation procedures of early mobilization and respiratory therapy enhances the function of the independent ventilation and neuromuscular function, reduces the number of days on mechanical ventilation and the number of days of treatment in intensive care units.

Service development and innovation

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The effect of referral type (advanced/specialist cardiology nurse vs. ed physician) on the profile of patients attending a nurse led outpatient chest pain clinic following discharge from emergency car

S Ingram,¹ G Mckee,² M Quirke,³ N Kelly,¹ A Moloney,¹ D Moore,¹ B Loo,¹ D Mulcahy,¹ V Maher¹ and B Khan¹

¹Adelaide & Meath Hospital, Dept. of Cardiology, Dublin, Ireland ²Trinity College Dublin, School of Nursing and Midwifery, Dublin, Ireland ³Trinity College Dublin, Centre for Practice and Healthcare Innovation, Dublin, Ireland

Chest pain accounts for 5-10% of Emergency Departments (ED) visits per year. Recent evidence suggests protocol driven discharge of non-Acute Coronary Syndrome (ACS) patients from ED can reduce hospital admissions. Further follow-up is recommended for discharged patients; however there is a dearth of published evidence regarding this group.

In December 2011 a Cardiology Registered Advanced Nurse Practitioner (RANP) and Clinical Nurse Specialist (CNS) (Cardiology Nurses) chest pain service began in an Irish acute hospital. The objective of the service is to expertly assess and risk stratify chest pain patients enabling those with suspected coronary heart disease (CHD) to be identified and treated, whilst those without, to be safely discharged.

There are two components of this chest pain service

- 1) Cardiology nurse consultation service to the ED;
- 2) Cardiology nurse led chest pain clinic review in the outpatient setting < 72 hours of discharge. Clinic referrals comprise Cardiology nurse referrals during consult hours and Out-of-hours referral by ED physicians

Purpose: This study aims to investigate the effect of referral type on the profile of patients attending a nurse led outpatient chest pain clinic following discharge from ED.

Methods: Cross sectional, naturalistic, comparative study design of all patients attending the nurse led chest pain clinic over a two year period. Data was extracted from case notes. Ethical approval was granted. Analysis used chi and t-test as appropriate.

Results: Overall, 8,317 patients presented to the ED with chest pain during this timeframe. A total of 1041(13%) patients were referred to the chest pain clinic, 467 by cardiology nurses and 574 ED Physicians. Overall patient profile: Mean age 54.2 years, 53% male, 18% previous history of CHD. Overall confirmed diagnosis; 76% non-cardiac chest pain, 14% diagnosed with CHD, 9% non-obstructive disease, 1% pre-existing CHD. Late presentation ACS of 1% was safely detected.

There was significant differences ($p < 0.001$) between referral type for age, history of CHD, GRACE risk score, stress test result and confirmed diagnosis. Initial assessment and referral by the cardiology nurses compared to ED Physicians resulted in more referrals of: older patients (56.5 yrs./52.3 yrs.); those with a history of CHD (24%/13%); a higher proportion of intermediate GRACE score (10%/5%); positive stress tests (21%/12%) and confirmed cardiac diagnosis (30%/18%).

Conclusion: Cardiology nurse expertise in initial assessment in the emergency department ensured more appropriate referral, diagnosis and resource use of the nurse led chest pain clinic.

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Nurse-led transient loss of consciousness clinic: results of a 1 year pilot

H Eftekhari¹ and F Osman¹

¹University Hospitals of Coventry and Warwickshire NHS Trust, Cardiology, Coventry, United Kingdom

Background: Landmark studies demonstrate a dedicated doctor clinic improves diagnostic rate for transient loss of consciousness (TLoC) achieved with systematic assessment, appropriate investigation, reduced length of stay. There was no dedicated service at our hospital. We piloted a nurse-led TLoC assessment clinic.

Objectives:

- 1) Systematic assessment
- 2) Appropriate testing
- 3) Increase diagnostic rate
- 4) Patient satisfaction
- 5) Reduce length of stay

Method: September 2013 – September 2014 registry we measured compliance with assessment, diagnostic rate, patient experience, and length of stay. This is compared to audit pre clinic

Results:

- 1) 188 patients: 99% compliance with clinical assessment.

Audit: compliance: 11%-88%

- 2) Appropriate testing: 100% ECG 100% sitting & standing BP. Appropriate monitoring – 45 (24%).

Audit pre clinic: 56% ECG, 18% sitting & standing BP, 35% monitoring – 27% inappropriate

- 3) Diagnosis rate 69.7% (131/188). 20 (15%) tachyarrhythmia, 13 (9%) bradyarrhythmia, 23 (18%)

postural hypotension, 14 (11%) neurocardiogenic, 55 (42%) vasovagal, 4 (3%) structural, 2 (1%) psychogenic.

Audit pre-clinic: 15% diagnosis

- 4) Patient experience 63 (33.5%) / 188 questionnaires. 90% satisfaction. Specific to nurse – 97%
- 5) Length of stay: reduced 3.2 days to 2.7 days.

Clinic safety: 1 referred neurology, 1 injury following consultation, 4 new structural (referred cardiology).

Conclusions: This nurse-led clinic for TLoC demonstrated 1) similar findings from previous doctor led studies 2) clinical safety 3) Positive patient experience.

Table 1.

How did you rate the following?	Excellent	Very Good	Good	Fair	Poor	Not Applicable
The information you had before you came to clinic?	11 (17%)	25 (40%)	14 (22%)	6 (9%)	2 (3%)	5 (9%)
The length of time you had to wait in clinic before you saw the nurse	35 (56%)	16 (25%)	6 (9%)	3 (4.5%)	2 (3%)	1 (1.5%)
Being kept informed of waiting times and reasons for any waiting in clinic	12 (20%)	16 (25%)	1 (1.5%)	4 (6%)	3 (4.5%)	27 (43%)
The length of time you had to discuss your health or medical problem with the nurse	46 (73%)	15 (24%)	2 (3%)	0	0	0
The nurse's explanation of your health or medical problem	49 (78%)	13 (20.5%)	1 (1.5%)			
The listening skills of the nurse	45 (71.5%)	15 (24%)	3 (4.5%)			
The nurse's explanation of any treatment you needed to have	46 (73%)	10 (16%)	2 (3%)			5 (8%)
The nurse's explanation of any drugs they prescribed for you e.g. their purpose, how to take them, side effects etc	24 (38%)	13 (21%)	2 (3%)	1 (1.5%)	1 (1.5%)	22 (35%)
Your overall level of understanding of what you were told by the nurse today	44 (70%)	14 (22%)	5 (8%)			
Your overall level of satisfaction with the care you received in the out-patient department today	49 (78%)	10 (16%)	2 (3%)	2 (3%)		

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A service evaluation for high risk non-ST segment elevation acute coronary syndrome (NSTEMI) patients and the use of additional working lists at a weekend

G Lee¹ and T Massey²

¹King's College London, Post Graduate Research, London, United Kingdom

²King's College Hospital, London, United Kingdom

Historically coronary angiography has been undertaken between 9am to 5pm Monday to Friday with limited provision for weekends and out-of-hours presentations. The aim of this service audit was to evaluate non-ST elevation Acute Coronary Syndrome (NSTEMI) patients comparing outcomes with an additional angiography Saturday list compared to no Saturday lists running. The National Institute for Health and Care (NICE) Excellence Guidelines and local National Health Service guidelines for NSTEMI were used to benchmark the service.

Methods: A retrospective review of patient electronic records was undertaken of two cohorts of patients a year apart, when working lists were carried out on a Saturday (June – August 2012) compared to a year later when the department reverted to the traditional model only worked from Monday to Friday (June – August 2013).

Data were gathered from the Trust's own Electronic Patients Records (EPR) and the admission record sheets from the Cardiac catheter Labs. Using the local pathway for NSTEMI patients, several measures were examined including average age of patients, average time waiting for angiography, use of the GRACE risk stratification tool and use of cardiac biomarkers such as Troponin T.

Results: A total of 120 patients were identified who met the inclusion criteria (59 in 2012 and 61 in 2013). The mean age was significantly older in 2013 (58.6 vs 65.3 years, $p = 0.011$) with the majority presenting for the first time (26 in 2012 & 48 in 2013, $p < 0.001$). Just under 50% underwent angiography only (29 in 2012 and 32 in 2013), 24 underwent PCI in 2012 with a similar number in 2013

(20) & a total of 13 underwent coronary bypass surgery (all non-significant). An abnormal troponin level was recorded in only 10 patients in 2012 but 52 patients in 2013 (85%)($p < 0.01$). The average time waiting for a procedure was 111 hours in 2012 and 77 hours in 2013 ($p = 0.119$). The GRACE score was not routinely used by the Emergency Department physicians.

Conclusion: The audit found that despite no additional Saturday lists being undertaken in 2013, the mean waiting time was less than in 2012. The service was compliant with the NICE guideline timeframes (i.e. 96 hours from diagnosis to coronary angiography) for the local population of this tertiary centre without the need for running an additional days service. However, it did not meet the locally NHS guidelines of 48 hours. Further education is needed amongst the ED clinicians to increase the use of the GRACE tool. Increased capacity is being addressed with an additional cardiac catheter lab being built and ready for early 2015.

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Efficacy of introduction of PAD guidelines for patients after cardiovascular surgery in intensive care unit

K Ishii,¹ M Koizumi,¹ M Shimada,¹ Y Seino² and K Yamazaki³

¹Tokyo Women's Medical University, Nursing, Tokyo, Japan ²Tokyo Women's Medical University, anesthesiology, Tokyo, Japan ³Tokyo Women's Medical University, Cardiovascular Surgery, Tokyo, Japan

Purpose: Pain after cardiac surgery is a serious stressor. What is more, if the postoperative pain was prolonged, it may turn into the persistent postoperative pain. This pain causes a depression of QOL level. Since 2014, we have incorporated the 2013 version PAD guideline by these reasons. The aim of our study is to clarify a difference of postoperative process before and after the introduction of PAD guideline. During this study, we carried out four times study sessions to learn basic knowledge about pain and to get common understanding about the importance of pain management.

Methods: This research was conducted in the 160 patients in our ICU between January 2013 and December 2014. The hospital ethical committee approved the study protocol, and because this observational study did not require any deviation from routine medical practice, informed consent was not required. Diseases of study patients were CHD, VHD, GVD, and LVAD implantation. All information was collected from medical record. Outcomes measured were first administration time of analgesic, number of using analgesic, intubation period, starting time of DIS, starting time of SBT, time to first sitting position on the bed side, delirium, and length of stay in ICU. The pain was evaluated by BPS. Kind of analgesic and the way of ad-

ministration was not particularly limited, we investigated only the number of dosage.

Results: Data was collected from 160 patients at baseline. First administration time of analgesic was achieved 2.5 days earlier after introduction ($p = .15$). Time to first sitting position on the bed side was achieved 1.2 days earlier ($p = .25$). And intubation period was achieved 1.3 days earlier ($p = .3$). However, before and after implementation of PAD guideline, no statistically significant differences regarding the following perceptions could be found: (1) number of using analgesic, (2) starting time of DIS, (3) starting time of SBT, and (4) length of stay in ICU.

Conclusion: Introduction of PAD guideline did not much influence to the patients' outcomes. Since a pain is subjective phenomenon, even if we use a pain scale, it is hard to validate the pain. The difference of pain management easily occurs by each nurse. So, we need to create a pain management protocol and a sedation protocol. Also each staff needs to understand the importance of pain management and to get the observation ability. Therefore it is necessary for us to consider the way of sedation to improve these results. To evaluate the long-term effect of PAD guideline, we need a follow-up survey about patients QOL until after hospital discharge.

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An innovative approach to envision sudden cardiac dying risk now achievable with software specific module

I Vranic,¹ V Mimic¹ and I Vranic¹

¹Specialized Hospital for Heart diseases Hertz, Belgrade, Serbia

Purpose: The relation between heart disease and ECG leads is basically very complicated, but relation between heart disease and heart vector is even more complex due to interaction of heart motion and respiration. In 2010 revising previously established 1994 criteria, Marcus et al published a proposed modification of those criteria for the detection of ARVC/D. Based on these criteria, the diagnosis can be stratified as definitive with fulfillment of two major or one major and two minor criteria. Utilizing these criteria, it may be possible to avoid further diagnostic studies that can be both invasive and expensive. For example, right ventricular biopsy has traditionally been used as a confirmatory test in ARVC/D. However, due to the patchy distribution of the fibrosis and the fact that intramyocardial fat often occurs in anterolateral and apical regions of the heart in normal individuals, there is a fairly high incidence of both false-positives and false-negatives. Based on these observations we tried to construct ECG/VCG software that is able to single out vector deflections in the region of interest for ARVC/D.

Methods: Out of 8000 regular outpatient visits total number of 35 arrhythmogenic right ventricular cardiomyopathy /dysplasia (ARVC/D) newly diagnosed patients were enrolled for software development. All of them were in disease early stage (since they raised score for diagnosis) with normal heart dimensions. One control group consisted of 125 patients with valvular heart disease and the other of 48 healthy subjects. Statistical analysis was done using Chi square, followed by Mc Nemar's test.

Results: All of investigated subjects presented positive V sign on Echo, displacement in the region of basal posterior septum with diskietic displacement that is always easy to spot on tissue color Doppler by M mode technique. Only 7 (20%) had positive late potentials and in

3 of them (8,6%) Epsilon wave was present. Half of them had positive family history of SCD. VCG maximal vectors streamed more leftwards in all groups of patients. The configuration of the ARVC/D loops as detected by our software showed bites in the region of magnitude i.e. vector amplitude deflection as opposed to controls. Even more the rest of 7965 outpatient ECG/VCG loops showed negative results as detected by this innovative software for having ARVC/D.

Conclusion: The accomplished innovative software is PCT patented and brand new biotechnology in serving to detect the risk for sudden cardiac death with 100% sensitivity and 90% specificity in general population with incidence of new cases of 3-5 among 1000 inhabitants.

Moderated Poster Session III Education, Arrhythmias & Service development Monday 15 June 2015 – 10:45 – 11:30

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Health-related quality of life among in-hospital cardiac arrest survivors

J Israelsson,¹ A Bremer,² J Herlitz² and K Arestedt³

¹Kalmar County Hospital, Department of Internal Medicine, Division of Cardiology, Kalmar, Sweden ²University of Borås, Academy of Care, Working Life and Social Welfare and the Centre for Prehospital Research, Borås, Sweden ³Linnaeus University, School of Health and Caring Sciences, Kalmar, Sweden

Purpose: A cardiac arrest can cause brain injury with cognitive dysfunctions, emotional reactions and negative effects on activities in daily life. However, most research has focused on survival and the knowledge about health-related quality of life (HRQoL) among survivors is limited. In addition, almost all studies are performed in an out-of-hospital context. The aim of the current study was therefore to describe HRQoL among in-hospital cardiac arrest (IHCA) survivors.

Methods: This study has a cross-sectional design. In collaboration with the Swedish national register for cardiopulmonary resuscitation, data was collected 3-6 months after resuscitation by using a questionnaire including Euro-QoL-5 dimension (EQ-5D), the Hospital Anxiety and Depression Scale (HADS) and single questions on activities in daily life and mental/intellectual recovery. In addition, the Cerebral Performance Category (CPC) was scored.

Results: In total, 286 IHCA survivors with a mean age of 67±12 were included. A majority of the survivors were men (65%), had a cerebral function of CPC 1 (88%) and had no need of assistance from other people in daily life (70%). A large proportion of the survivors had not made a complete mental and/or intellectual recovery (34%), causing problems in daily life for 65% of them. Pain was the dimension in EQ-5D where most survivors reported problems of some degree (64%). Problems within the dimensions anxiety/depression and mobility were reported by more than half of the survivors (53% vs. 51%). In the dimensions personal care and activities in daily life problems were reported by less than half of the survivors (24% vs. 49%). The individual variations of present health measured by the EQ-VAS were substantial (range 0-100), with a mean value of 67±22. Symptoms of anxiety and depression (measured by HADS) were reported by 15% and 16% respectively.

Conclusions: Although the majority of the IHCA survivors reported satisfactory HRQoL, the results indicate major individual differences, with a substantial group reporting serious problems. Our findings stress the importance of assessing HRQoL among IHCA survivors and the need of follow-up and structured post cardiac arrest care.

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A theoretical exploration of women's perception of risk for Coronary Heart Disease

R Smith,¹ A Hyde¹ and L O Connor¹

¹University College Dublin, School of Nursing, Midwifery & Health Systems, Dublin, Ireland

Purpose: This study investigated the experiences of thirty women with a primary presentation of NSTEMI/UA, with a focus on the mediating impact of a newly-diagnosed disease on their lives. The study examined a theoretical proposition that women have limited understanding of Coronary Heart Disease (CHD) risk factors. The aim was to provide insight into women's perception of risk for CHD in an Irish context.

Methods: A naturalistic case study design guided this study; a within-case analysis was followed by a cross-case analysis of all cases. Within-methods triangulation captured the depth and breadth of the experiences of thirty women. Data, derived through interviews and participant diaries, were analysed using modified analytic induction which allowed the emergence of theoretical insights.

Results: The women's narratives reveal divergent and yet dominant constructions of disbelief about the onset of ACS (NSTEMI/UA). The study findings provide a strong indication that women's treatment-seeking decision-making was based on the individual embodied experience of symptoms and interpretation of risk for CHD. The examination of a theoretical proposition that women have limited understanding of CHD risk factors reveals that many women's knowledge of 'heart attack' was gleaned from personal experience and media reports. The construction of CHD as a gendered condition appeared to influence the women's interpretation of risk for CHD. A salient finding demonstrates that most women did not appear to understand the implications of biomedical CHD risk-factors while some women did not assimilate that smoking is a major independent risk factor for CHD.

Conclusions: The study findings are important because women who do not recognise a risk for CHD may be less motivated to engage in lifestyle change. This study creates a platform for a wider discourse on women's perception of risk for CHD. Primary care services must play a key role in improving the primary and secondary prevention of CHD.

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Testosterone and metabolic syndrome in patient with coronary artery disease

L Bica¹ and ML Lezha¹

¹University Hospital Center Mother Theresa, cardiology: S.U. SH Ndroqi, Tirana, Albania

Background: Obesity, diabetes, hypertension, dyslipidemia, components of the metabolic syndrome (MS) are more common in men with lower testosterone levels.

Methods: We have studied the relationship between endogenous sex hormones and metabolic syndrome in 933 men (27-72) with suggestive symptoms of CAD (coronary artery disease) in a cross-sectional study. The patients performed diagnostic and/or PTCI angiography.

Results: From the total group of patients included in the study, the prevalence of metabolic syndrome was 11%. The prevalence of metabolic syndrome was higher in men with CAD (12.75%) compared to the control group without CAD (6.15%) $p = 0.0003$. Patients with MS have lower levels of testosterone (4.48nmol/ml) compared to patients without MS (5.65nmol/ml), regardless of the presence or not of CAD. The level of testosterone in the group of metabolic syndrome was 0.82 nmol / ml or 14.5% lower ($R = -0.81$, $P < 0.0001$). Reduce by 1 nmol / ml of testosterone increases the opportunity for metabolic syndrome about 14.4% (odd ratio 0.85, 95% CI. 0.76-0.92, $P = 0.009$)

Conclusion: Metabolic syndrome in men is associated with lower levels of testosterone. Low levels of testosterone can be considered as an independent risk factor for SM. Metabolic syndrome is more prevalent in patients with CAD.

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Interdisciplinary approach in application of noninvasive ventilation in patient with acute myocardial infarction and COPD exacerbation

A Kraljevic,¹ D Grgurevic¹ and I Marinac²

¹University Hospital Centre Zagreb, Department of Cardiology, Zagreb, Croatia ²Eksa Grupa, Samobor, Croatia

Introduction: Noninvasive ventilation (NIV) is a type of mechanical ventilation that is performed without endotracheal intubation. Along with technology advancement, many different interfaces have been developed in order to meet the needs of clinicians and to provide comfort and safety to patients during NIV.

Case report: Patient V. F. (born 1936.) with acute myocardial infarction, exacerbation of chronic obstructive pulmonary disease (COPD), diabetes mellitus type II and

paroxysmal atrial fibrillation was admitted to emergency department and transferred to intensive coronary unit.

Patient status: On EKG; sinus rhythm, ST elevation seen in V1-V6, chest pain (lasting 2 hours), dyspnea at rest, diminished basal lung sounds, radiographic findings of the heart and lungs; not there is stagnation nor inflammatory changes of the lung parenchyma, shadow hearts somewhat increased. Hemodynamically and respiratory stable, oriented, mobile and without peripheral edema.

Emergency coronarography confirm the significant stenosis RCA and occlusion paroxysmal LAD, during procedures stent in LAD, patient is hypotensive but without pain. The next day patient is somnolent but his status deteriorates, atrial undulation develops (frequency 135/min) along with extreme dyspnea (SpO₂ 81 %) and worsening of acid-base balance (pH 7.24, PaCO₂ 11.5 kPa, PaO₂ 18.9 kPa). CPAP therapy was applied using a mechanical ventilator and oronasal mask (CPAP 7 cmH₂O, FIO₂ 45%) with poor patient tolerance and extreme anxiety. Monitor the hemodynamic status of patient with monitoring of vital functions, using prescribed medical therapy. After 6 hours of CPAP there was no improvement with persistent hypercapnia (PaCO₂ 10.1 kPa). Oronasal mask and transport ventilator were replaced by full-face mask and NIV-dedicated ventilator with the following settings; EPAP 7 cmH₂O, IPAP 15 cmH₂O and FIO₂ 45%. Ventilation was improved after 4 hours of therapy (SpO₂ 93%, pH 7.39, PaCO₂ 5.6 kPa, PaO₂ 8.1 kPa).

Conclusion: When used as a first choice of therapy, NIV lowers the rate of nosocomial infections and need for invasive mechanical ventilation. Benefits of NIV are most evident in cardiogenic pulmonary oedema and COPD exacerbation. Choice of interface and ventilator is of crucial importance for success of NIV. Interdisciplinary team is necessary in starting and monitoring NIV. Attention should be focused on monitoring vital signs and patient's tolerance of interface.

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Heart failure awareness day activities in Slovenia: collaboration between nurses and other health care professionals

T Zontar,¹ A Kvas² and M Lainscak¹

¹University Clinic of Respiratory and Allergic Diseases Golnik, Golnik, Slovenia

²University of Ljubljana, Faculty of Health Sciences, Ljubljana, Slovenia

Purpose: Heart failure (HF) represents a major public health problem in the developed world, but remains unrecognized among general public as well as among health care professionals. Heart Failure Association launched the Heart Failure Awareness Day to increase awareness and Slovenian joined the initiative in 2011.

The aim of this analysis was to evaluate the joint efforts delivered in collaboration between Professional group of nurses and health technicians in cardiology and angiology Nurses and Midwives Association of Slovenia, Slovenian Society of Cardiology and hospitals in Slovenia from 2011 to 2014.

Methods: Healthcare professionals, mostly Nurses and doctors, from 14 hospitals in Slovenia were involved in the implementation of activities from 2011 to 2014. They organized lectures for lay public and medical staff about HF education, promoted healthy lifestyle, evaluated cardiovascular risk factors, had open-day clinic. In 2011, an awareness questionnaire survey was started, and repeated in 2013 and 2014. Printed material was delivered during the activities.

In 2013 we had also invited students from Faculty of Health Sciences to participate on stand of recreational event fair in Ljubljana. Students promoted healthy lifestyle and measured blood pressure. In 2014 the DVD about HF, involving experts from 7 centres in Slovenia were prepared. Workshops about healthy life style and cooperation with different patient organisations were also prepared.

Results: Overall 97 lectures for lay public and professionals have been prepared in 14 centres in Slovenia since 2011. Most centres with HF clinics organized an open-day clinic. During four years physical activity workshops included nordic walking, healthy lifestyle lectures and blood pressure monitoring. Each year, doctors together with group of nurses prepared HF education for nurses from all 14 centres, including how-to sessions about nutritional risk assessment and physical performance tests. The awareness study from 2011 found low level of HF awareness among lay public and several misbeliefs and misconceptions. Media campaign resulted in a HF promotional video clip broadcasted by national and local TV, a 40-minute HF educational DVD for the patients, and >100 interviews, articles, and other appearances in media.

Conclusion: The Heart Failure Awareness Day activities in Slovenia were delivered at a national level and we gained initial information about general public awareness. Media coverage was appropriate and we gained acknowledgement for our activities from The Heart Failure Association.

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The occurrence of anxiety and depression over time among out-of-hospital cardiac arrest survivors

A Axelsson,¹ K Stibrant Sunnerhagen² and J Herlitz³

¹University of Gothenburg, The Sahlgrenska Academy, Institute of Health and Care Sciences, Gothenburg, Sweden ²University of Gothenburg, The Sahlgrenska Academy, Gothenburg, Sweden ³University of Borås, The prehospital research center western Sweden, Borås, Sweden

Purpose: To identify occurrence and variations of depression and anxiety among survivors 3 and 12 months after out-of-hospital cardiac arrest (OHCA)

Methods: A retrospective design with postal questionnaires was used. The data was collected in Western Sweden that is populated by 1.6 million of inhabitants. The region has about 850 cardiac arrests annually. The thirty-day survival rate is about 10% in the region. A consecutive sample comprising adult patients who had survived a OHCA, age > 18 years, > 30 days survival and still alive and Cerebral Performance Categories scale (CPC) score 1 or 2 at discharge from hospital was selected. The patients were identified through the Swedish registry of pre-hospital cardiac arrest. The study period was from January 2008 to December 2012. Data were collected by a 14-item self-administered screening instrument, Hospital Anxiety and Depression scale (HADS). The instrument comprises 7 items concerning depression and anxiety respectively. The questionnaire was mailed to the patients 3 and 12 months after OHCA.

Results: During the study period 298 patients survived one month, and 189 of them were available for a follow-up. Seventy-three patients answered the questionnaire at both 3 months and 12 months follow-up. The mean age of the sample was 61 years (SD+14), 16 % were women and 86% of OHCA were presumed to a cardiac etiology. There was a significant decrease both in occurrence of depression (13% vs 6%; $p = 0.04$) and anxiety (29% vs 22%; $p = 0.02$) between 3 and 12 months follow-up.

Conclusion: The occurrence of depression and anxiety after OHCA decreased over time, but still about one-fifth of the survivors still experienced anxiety one year afterwards.

Oral abstract session III

Monday 15 June 2015 – 11:30 – 13:00

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A better life - expectations of octogenarians on acute coronary syndrome treatment

E C Widell,¹ E S Andreen¹ and Å B Axelsson¹¹University of Gothenburg, Gothenburg, Sweden

The purpose was to explore the expectations of elderly patients (80+) diagnosed with acute coronary syndrome (ACS) on offered treatment while participating in a randomised study.

Method: Patients aged > 80 years admitted to hospital diagnosed with ACS were included in a multicentre study where they were randomised to conventional medical treatment or invasive treatment, coronary angiography with Percutaneous Coronary Intervention (PCI) alternatively Coronary Artery Bypass Surgery (CABG), if appropriate. At one of the included study centres 20 patients from the randomised multicentre study were recruited for this qualitative sub-study. Participants were interviewed before randomisation, and thus did not yet know what treatment they were assigned to. The interviews were conducted at the coronary intensive care unit and a semi-structured interview guide was used. The main questions were: "What are your expectations on whatever treatment you will receive?"; "How do you feel about being randomised to a treatment?" Data was analysed according to Qualitative Content Analysis (QCA).

Results: 9 of the 20 patients were women, mean age was 85.6 years (range 80 to 91 years). The QCA resulted in two main categories, "Hope of increased quality of life" and "To feel trust" and seven subcategories. The participants hoped for an increased quality of life varied, some expressed a diffuse wish "to be fine", others wished "to be active", with the intentions to be able to go on working and/or be physical active. Most participants wanted "to get rid of the symptoms" that made them seek acute care and some wished for "vitality".

Participants accepting to be included in the study where they were randomised to a treatment expressed that they felt reliance upon the health care. It was common to consent to participation since they believed it could "be of help for others", but they also thought it could "be of help for themselves". Some "felt dubiety" expressed as e.g. that the question of participation came a little hastily or that they hoped they had made the right decision.

Conclusion: The octogenarians expressed hope of a better life with less distress from symptoms and increased vi-

tility during the remaining lifetime. Their acceptance to participate in the study was based on their trust and their belief in being of help for others.

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Cardiovascular nurses attitudes to and experiences with guidelines and nursing research

C Helmark,¹ G Ingwersen,¹ K Johansen¹ and TB Hansen¹¹Roskilde Hospital, Cardiology, Roskilde, Denmark

Purpose: There is an increasing awareness of nurses roles in guidelines. More nurses are taking part in developing guidelines but there is still some way to ensure implementing in clinical practice. Reported barriers to guideline implementation include education, knowledge and perception of low relevance when changing best practice to evidence-based practice. The purpose of the study was to investigate cardiovascular nurses knowledge and use of national and European guidelines and their attitudes towards nursing research in clinical practice.

Methods: The study was conducted as a cross sectional electronically survey between August and October 2014 to all cardiovascular nurses in 6 Danish hospitals (n = 277). Descriptive statistics were used. Additionally we used Chi-square to test associations between 5 variables: years since graduation, years of employment, educational level, workplace (in- vs. outpatient setting), employment status (nurse specialist vs. non nurse specialist) against knowledge and use of guidelines and attitudes towards nursing research. The response rate was 56% (156/277).

Results: The mean age among the responders is 42 years with an average of 17 years since graduation and 8 years of employment in current setting. Among the nurses 27 (17%) have a higher education, 69(44%) work in outpatient settings, and 43 (27%) report being a nurse specialist.

Of the 156 nurses 120 (77%) know and 119 (76%) use national guidelines, while 81 (52%) know and 78 (50%) use European guidelines. Regarding nursing research, 95 (61%) of the nurses express a high degree of interest in participating in nursing research and 111 (71%) consider nursing research very important, but only 55 (35%) experience that it is conducted in clinical practice. Nursing research is relevant to clinical practice according to 90 nurses (58%), but only 61 (39%) experience these are being clinically used.

Significantly more nurses in outpatient settings have knowledge of European guidelines (70%) compared to nurses in inpatient settings (38%)(p<0.001), and correspondingly use them (70%) versus (33%)(p<0.001). Significantly more nurse specialists have knowledge of European guidelines (70%) compared to non-specialist

nurses (46%) ($p < 0.007$) and use them (70%) versus 42% ($0 < 0.001$).

Conclusion: We found room for improvement with around 25% of the nurses not knowing and using national guidelines and around 50% not aware of European guidelines. We identified a gap regarding nursing research with the majority of nurses being interested but only a minority experiencing that it is being used in clinical practice.

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Assessing the impact of a structured lifestyle modification programme on the cardiovascular risk profile of severely obese adults

I Gibson,¹ K Cunningham,¹ J Jones,¹ J Windle,¹ C Costello¹ and F Finucane²

¹National Institute of Preventive Cardiology, Croí West of Ireland Cardiac Foundation, Galway, Ireland ²Galway University Hospital, Galway, Ireland

Introduction: Lifestyle modification is fundamental to obesity treatment, but few studies have described the

effects of structured lifestyle programmes specifically in bariatric patients. We sought to measure changes in anthropometric and metabolic characteristics in this cohort after participation in a nurse-led, group-based, fully supervised eight week programme, incorporating tailored weekly exercise sessions and educational workshops.

Methods: Weight, height, waist circumference, blood pressure, HbA1c, fasting glucose and lipid profiles as well as functional capacity (Incremental Shuttle Walk Test) and questionnaire-based anxiety and depression scores before and after the programme were compared in per-protocol analyses using a paired t-test.

Results: Data on 150 patients who completed the programme were analysed. See Table 1.

Conclusion: Bariatric patients completing an eight week, nurse-led structured lifestyle programme had improved adiposity, fitness, lipid profiles, blood pressure, and psychosocial health. Further assessment of this programme in a pragmatic randomised controlled trial is warranted.

Table 1. Summary of outcomes. (abstract 186)

	Patients IA (n = 150)	Patients EOP (n = 150)
Mean (SD) BMI (kg/m ²)	46.3 (8.3)	44.9 (9.0) $p < 0.001$
Mean (SD) Mediterranean Diet Score	4.1 (2.2)	8.2 (2.3), $p < 0.001$
% Achieving physical activity targets	4.5	38.4 $p < 0.001$
Mean (SD) Estimated METs Maximum	5.9 (1.7)	6.8 (2.1) $p < 0.001$
Mean (SD) Systolic BP in those not achieving target of < 140 mmHg	145.5 (15)	138.3 (17.3) $p < 0.001$
Mean (SD) Diastolic BP in those not achieving target of < 90 mmHg	91.6 (7.8)	85.7 (11.3) $p < 0.001$
Mean (SD) TC in those not achieving target of < 5 mmol/l	5.8 (0.8)	5.2 (0.9) $p < 0.001$
Mean (SD) LDL in those not achieving target of < 3 mmol/l	3.8 (0.8)	3.4 (0.7) $p < 0.001$

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A one-size fits all approach to ICD therapy: Is what is good for the gander also good for the goose?

SS Pedersen,¹ JC Nielsen,² S Riahi,³ J Haarbo,⁴ R Videbaek,⁵ ML Larsen,³ C Knudsen¹ and JB Johansen¹

¹Odense University Hospital, Odense, Denmark ²Aarhus University Hospital, Skejby, Aarhus, Denmark ³Aalborg University Hospital, Aalborg, Denmark ⁴Gentofte University Hospital, Gentofte, Denmark ⁵Rigshospitalet - Copenhagen University Hospital, Copenhagen, Denmark

Purpose: DEFIB-WOMEN (Utilization of Implantable Cardioverter DEFIBrillator Therapy in the Treatment of Heart Disease: Clinical and Psychological outcomes in WOMEN) is a national study that was designed to examine gender differences on (1) patient reported outcomes

(PROs), (2) procedure- and device-related complications, and (3) ventricular tachyarrhythmias and mortality. This presents the first results on PROs at baseline.

Methods: Consecutive patients ($N = 1766$; mean age = 65 ± 11 ; 81% men) implanted with a first-time implantable cardioverter defibrillator (ICD) at five implanting centers between June 2010-April 2013 were asked to complete standardized and validated PROs at baseline that tap into quality of life (Short Form Health Survey 36; range 0-100), anxiety and depression (Hospital Anxiety and Depression Scale; range 0-21), device-related concerns (ICD Patient Concerns questionnaire; range 0-32) and device acceptance (Florida Patient Acceptance Survey; range 0-100). Information on baseline characteristics were captured from patients' medical records or purpose-designed

questions. Cohen's effect size (ES) index was used to determine clinical relevance (0.20 = small; 0.50 = moderate; ≥ 0.80 = large).

Results: Women reported more impaired physical (39.65 ± 10.38 vs. 42.10 ± 9.56 , $p < 0.0001$; ES = 0.25) and mental quality of life (43.83 ± 12.07 vs. 47.40 ± 10.52 , $p < 0.0001$; ES = 0.33) than men, and were more likely to suffer from symptoms of anxiety (3.81 ± 3.61 vs. 5.54 ± 4.21 , $p < 0.0001$; ES = 0.46) and depression (2.89 ± 3.14 vs. 3.98 ± 3.63 , $p = 0.001$; ES = 0.34). Women were also more likely to report more ICD concerns related to being fearful of shocks (10.44 ± 8.35 vs. 7.20 ± 6.97 , $p < 0.0001$; ES = 0.45) and scored lower on device acceptance as compared to men (71.58 ± 17.12 vs. 74.51 ± 16.46 , $p = .013$; ES = 0.18). As indicated by Cohen's ES index, the magnitude of the differences between women and men was small for device acceptance and physical quality of life, with the largest differences found on ICD concerns and anxiety.

Conclusion: These first results indicate that women with an ICD experience particularly more anxiety and ICD-related concerns as compared to men at the time of implantation. Future results of DEFIB-WOMEN using the prospective data will show whether these gender differences remain over time.

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Patients' goal, resources and perceived hindrances for future change - a qualitative study of patients' reflections at hospital discharge after myocardial infarction

NF Nina Falun,¹ BF Bengt Fridlund,² MS Margrethe Schaufel,³ ES Edvin Schei³ and TMN Tone Merete Norekval¹

¹Haukeland University Hospital, Department of Heart Disease, Bergen, Norway ²Jonkoping University, Jonkoping, Sweden ³University of Bergen, Bergen, Norway

Background: Patients undergoing a myocardial infarction (MI) may find adherence to lifestyle advice and medication challenging. Motivational factors or barriers for these changes are crucial. However, empirical evidence on patient's ability to assess lifestyle changes at the time of discharge is limited.

Aim: The aim of this study was therefore to explore MI patient's goals, resources and perceived hindrances for future change at the time of hospital discharge.

Methods: We conducted a qualitative interview study with a purposive sample of twenty MI patients, of them eight women, in a department of heart disease at a university hospital in Norway. All interviews were undertaken prior to hospital discharge, transcribed verbatim and analyzed with qualitative content analysis.

Findings: Three themes revealed that patients' experience of MI were complex and divergent at the time of discharge. There were patients who were motivated for both life-style changes and to chart a new direction for the future life, implicating a change of life perspective. Patients who experienced complication during hospital stay or had a complicated life situation felt both discouraged and anxious, and just wanted to keep going. Commonly, patients were struggling to understand the context of living with MI, managing symptoms and understanding the precipitating causes of their illness.

Conclusion and implications: This study reveals the need for a different approach to MI patients at the time of discharge. Person-centered care where personal narratives are focused may chart a more individualized guidance to prepare MI patients to cope with every day challenges after discharge.

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Depressive symptoms and vitamin C deficiency have a combined effect on cardiac event-free survival in patients with heart failure

E K Song¹ and Y Lee²

¹University of Ulsan, College of Medicine, Department of Nursing, Ulsan, Korea, Republic of ²University of Ulsan, Department of Thoracic and Cardiovascular Surgery, College of Medicine, Ulsan University Hospital, Ulsan, Korea, Republic of

Background: Depressive symptoms and vitamin C deficiency are associated with increased inflammatory cytokines that predict shorter cardiac event-free survival in heart failure (HF) patients. Poor eating patterns in depressed patients can contribute to vitamin C deficiency; however, little is known about the relationships among depressive symptoms, vitamin C deficiency, and cardiac events.

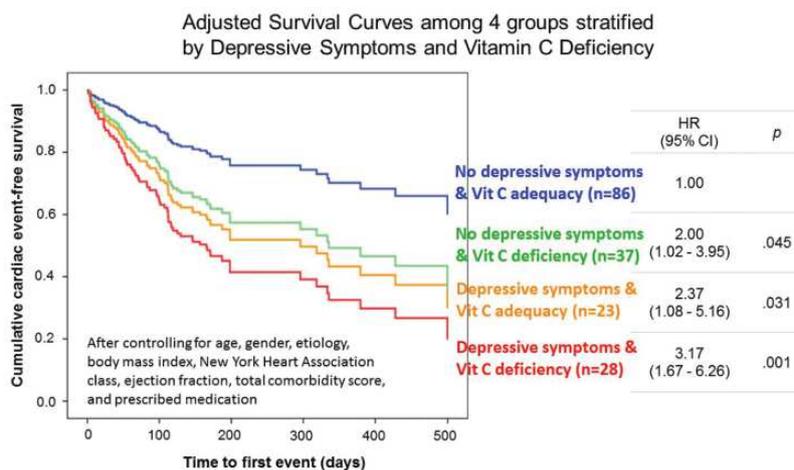
Purpose: We hypothesized that patients with depressive symptoms and vitamin C deficiency would have the shortest cardiac event-free survival among 4 groups stratified by depressive symptoms and vitamin C deficiency.

Method: A total of 174 HF patients completed the Patient Health Questionnaire-9 (PHQ-9) to assess depressive symptoms and split into 2 groups by the PHQ-9 score of 10. Patients completed a 3-day food diary. Computer Aided Nutrition analysis program was used to determine intake of vitamin C. Patients with > 85% probability of deficiency were defined as having a diet deficient in vitamin C. Patients were followed for 1 year to determine cardiac hospitalization or death. Hypotheses were tested by the Cox hazard regression.

Results: 65 patients (37%) had depressive symptoms and 56 (32%) had vitamin C deficiency. During the 1 year follow-up period, 68 patients (39%) had cardiac events. In the

Cox hazard regression, patients with depressive symptoms and vitamin C deficiency had 3.2 times higher risk for cardiac events than those with vitamin C adequacy and no depressive symptoms (95% CI = 1.67-6.26), adjusting for clinical variables.

Conclusion: This study shows a combined effect of depressive symptoms and vitamin C deficiency on cardiac event-free survival. Future study is needed to determine whether vitamin C adequacy could play a protective role in the impact of depressive symptoms on health outcomes.



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Nurses need targeted further education interventions in advancing evidence based practice competencies

V Lusenius,¹ S Ekola,¹ A Lahtinen¹ and R Meretoja²

¹Helsinki University Central Hospital, Heart and Lung Center, Helsinki, Finland ²Hospital District of Helsinki and Uusimaa, Helsinki University Central Hospital, Helsinki, Finland

Purpose: Nurses' professional competence is a key contributor to safe and effective patient care. Continuing self-assessment of practicing nurses is important in order to identify key areas for professional development. The aim of this study was to find out what are the main priorities in developing nurses' competencies in evidence based practice in cardiology setting. This paper contains preliminary results of cardiac nurses' self-assessed level of competencies in evidence based practice.

Methods: The self-assessed level on professional competence was measured by using the generic 73-item Nurse Competence Scale© (NCS, Meretoja 2004). The instrument consists of seven subcategories: Helping role, Teaching-coaching, Diagnostic functions, Managing situations, Therapeutic interventions, Ensuring quality, and Work role competencies. The level of competence is measured by visual analogy scale (0, very low - 100, very high). The data was collected with an electronic survey questionnaire in 2014. All Registered Nurses practicing in cardiac units were asked to participate in this study. The response rate was 80 % (n = 117).

Results: Cardiac nurses self-assessed their overall professional competence on good level (VAS mean 64.7). Nurses practicing in cardiology setting assessed themselves most competent in managing changing patient care situations and in diagnostic functions. However, all competencies (n = 19) related to evidence based nursing practices were assessed on rather low level (VAS mean 45.6).

Conclusion: Cardiac nurses self-assessed their generic professional competence on good level. The nurses felt themselves most competent in managing changing situations and diagnostic functions which are highly relevant areas in cardiac nursing. However, their competence level was weakest in the use of evidence based knowledge and in the development evidence based practices in patient care. Targeted further education interventions are needed to expand practicing nurses' competence levels in evidence based practice development. This is essential contributor that cardiac patients may receive the best possible care available.

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Ethno-cultural and gender differences in medication adherence following acute coronary syndrome presentation: A qualitative investigation

K King-Shier,¹ S Singh,¹ P Leblanc,¹ NA Khan,² E Chong,² H Quan¹ and C Mather¹

¹University of Calgary, Calgary, Canada ²University of British Columbia, Vancouver, Canada

Purpose: South Asian and Chinese people represent Canada's largest and most rapidly growing ethno-cultural groups. Evidence suggests that both South Asians (SA) and Chinese (CH) who have heart disease are less adherent to prescribed medications than Caucasians (White; CA). Non-adherence can lead to ongoing cardiac symptoms or death. To improve this situation, the relevant barriers and facilitators to (not) adhering to prescribed regimens must be understood. The purpose of this study was to examine that decision-making process in SA, CH, and CA Acute Coronary Syndrome (ACS) patients.

Methods: Grounded theory methods were used to examine this process. In-depth interviews were conducted with 64 ACS patients (25 SA, 13 CH, and 26 CA men and women) who were purposively chosen to participate in this study. Interviews were conducted in their language of preference. Transcribed texts were analyzed using constant comparative methods to enable ongoing analysis as well as to guide sampling. The questions posed about linkages or relationships have enabled identification of a core category around which the theory has developed.

Results: The general process of adherence was similar, with some variations ethno-cultural affiliation and gender. Having positive perceptions of their communication with the physician/cardiologist was the main factor affecting participants' medication adherence. Participants' personal-social resources (e.g., family support, communication with other health care professionals, fear of pain and suffering, or one's sense of duty to family) also enhanced adherence. South Asian men were more reluctant to accept a medication regime than SA women, or people of CH or CA ethnicity. South Asian men expected detailed information/education from their physician/cardiologist as a routine health service, whereas SA women relied more on family for information. Caucasian women assertively asked for the information, whereas CA men were more accepting of the medical regime. However, common goals of the CA participants were to avoid symptoms and enhance the quality of life for greater autonomy. Chinese men and women obeyed the doctor's orders implicitly. Some SA men and women adhered to their medications to fulfill religious duty to be cured or to live long enough to fulfill family responsibilities.

Conclusion: These data suggest there are some important ethno-cultural and gender differences in the process associated with medication adherence. Clinicians, whether physicians, nurses or pharmacists, need to consider potential ethno-cultural and gender-based nuances when teaching and interacting with patients.

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Preparing for the worst and hoping for the best: combining heart failure care and palliative care at the end of life

M Brice¹ and A Martin¹¹St Christopher's, London, United Kingdom

Introduction: Our patient is an 80 year old retired business man who is housebound and lives alone in a 2 storey home. His bed is now downstairs and he never goes upstairs. He is widowed and has 2 adult children. He relies on his children for shopping and housework. He has few visitors.

He has ischaemic heart disease with previous myocardial infarctions and coronary artery bypass surgery. He now has chronic heart failure secondary to left ventricular systolic dysfunction. He has a CRT-D device in place and activated. He has had three admissions in 9 months for ascitic drainage.

Alongside his cardiac diagnosis he has stage 3A chronic kidney disease, anaemia, gout, type 2 diabetes, chronic obstructive pulmonary disease and osteoarthritis affecting his knees particularly.

He feels 'low' and regrets his dependence on others. He does not understand all his health problems and chooses not to take many of his medications for various reasons. He does not want to have his defibrillator deactivated, but he also does not want to have his life prolonged. He would like to feel better than he does now but he does not want to keep going into hospital. He is not scared of death, but he does not want to 'suffer' in the period until he dies.

Palliative care

He consented to participate in our feasibility study to test a model of heart failure palliative care case management. On entry to the intervention group his heart failure and palliative care needs were then addressed by a heart failure palliative care nurse (HFPCN) working as his 'case manager'.

Heart failure palliative care management plan

Our patient agreed a plan of care that was acceptable to him. His HFPCN successfully applied for 'continuing care funding', given to patients either on a level of health need or in recognition of short prognosis. This enabled access to the specialist carer service from the hospice. With carers coming in he agreed to a programme of subcutaneous furosemide infusion to relieve his fluid overload and prevent hospital admission. He has started to engage tentatively in conversations about deactivating the Defibrillator component of his CRT device. Before making this decision he has requested more information and liaison with the cardiologist who implanted it.

Conclusion: We suggest that patients should hope for the best but prepare for the worst but so must professionals. We should combine interventions which will improve symptoms and quality of life with those that support decision making about future wishes and preferences.

Poster Session II

Monday 15 June 2015 – 08:30 – 16:00

Heart Failure

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Evaluation of a nine-item thirst distress scale for patients with heart failure

N Waldreus¹ and T Jaarsma¹

¹Linköping University, Department of Social and Welfare Studies, Linköping, Sweden

Purpose: Patients with heart failure (HF) can experience thirst so intense that the urge to drink becomes irresistible and causes distress. There is no instrument to measure thirst distress in patients with HF, which is both reliable and valid. The aim of this study was to psychometrically evaluate the nine-item Thirst Distress Scale for patients with HF (TDS-HF).

Methods: Data were collected using the TDS-HF. This scale was developed based on the original TDS for patients with renal failure on haemodialysis. The TDS-HF was previously translated into Swedish, adapted to patients with HF and pilot tested. The scale consists of nine items on a 5-point Likert scale (total score: 9–45). Examples of items are as follows: ‘My thirst bothers me daily’, ‘My mouth feels dry when I am thirsty’ and ‘I am so thirsty I could drink water uncontrollably’. Content validity and reliability were assessed by item-total and inter-item correlations, exploratory factor analysis and Cronbach’s alpha.

Results: A sample of 69 Swedish patients prior HF titration at two HF clinics (mean age: 73±7 years, 46% New York Heart Association [NYHA] functional class III–IV, 83% men) participated in this study. The total median (25th and 75th percentiles) value for the TDS-HF was 16 (11–22). The item total correlation of items varied between 0.61 and 0.82, while inter-item correlations varied between 0.34 and 0.87. The findings from the factor analyses showed that TDS-HF included two factors that were labelled as ‘a general thirst sensation’ and ‘thirst with mouth sensations’. The internal consistency of the TDS-HF was high ($\alpha = 0.92$), and for the two factors, the alpha values were 0.92 and 0.82, respectively.

Conclusions: The TDS-HF was found to be a valid and reliable tool for evaluating thirst distress in patients with HF. It is ready to be used in research and translated and validated in other languages.

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Influence of anxiety and depression episodes on the quality of life of patients with chronic heart failure

M Obieglo,¹ M Kusniercz¹ and I Uchmanowicz¹

¹Wroclaw Medical University, Department of Clinical Nursing, Wroclaw, Poland

Purpose: Heart failure (HF) affects 1–2% of adult population from developed countries, and constitutes one of the most frequent causes of hospitalization due to cardiovascular conditions. Patients with HF suffer from a number of other comorbidities. Moreover, they experience health and life concerns and/or depressive episodes, which markedly impair their functioning and diminish their quality of life (QoL). Furthermore, depressive disorders may potentiate the symptoms of HF and disrupt the process of therapy and self-care. The aim of the study was to determine if the levels of anxiety and depression exert significant independent effect on the QoL of patients with chronic HF.

Methods: The study included 100 patients hospitalized due to HF corresponding to NYHA functional classes II–IV. The QoL of the study participants was determined with Minnesota Living with Heart Failure Questionnaire (MLHFQ), and their levels of depression and anxiety were measured with the modified Hospital Anxiety and Depression Scale (HADS-M).

Results: We found significant correlations between the MLHFQ scores and the levels of anxiety and depression determined with HADS-M ($R = 0.373$, $p < 0.001$ and $R = 0.443$, $p < 0.001$, respectively). Moreover, significantly higher MLHFQ scores were documented in individuals with NYHA class IV HF ($p < 0.001$), as well as in patients with concomitant liver failure ($p = 0.046$) and/or asthma/COPD ($p = 0.060$). The level of depression determined with HADS-M ($F = 8.822$; $p = 0.004$) turned out to be the only significant independent determinant of the MLHFQ scores on multivariate analysis. The multivariate model, including the levels of anxiety and depression, NYHA functional class and concomitant liver failure or asthma/COPD, as well as interactions between the qualitative predictors, explained ca. 42% of variance in the QoL of HF patients ($R^2 = 0.416$).

Conclusion: The level of depression is the independent predictor of QoL in HF patients.

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Physical activity in daily life in heart failure patients living in two European countries

L Klompstra,¹ T Jaarsma,¹ A Stromberg,² A Muhic,² P Gastelurrutia,³ R Cabanes,³ R Rodriguez,³ B Gonzalez,³ J Lupon³ and A Bayes-Genis³

¹Linköping University, Department of Social and Welfare studies, Faculty of Health Science, Linköping, Sweden ²Linköping University, Department of Medical and Health Science, Faculty of Health Science, Division of Nursing Science, Linköping, Sweden ³Germans Trias i Pujol University Hospital, Unitat d’Insuficiència Cardíaca, Badalona, Spain

Purpose: Regular activity is important for heart failure (HF) patients and might be influenced by cultural or

regional differences. We aimed to assess the physical activity in daily life in HF patients, assess related factors and assess differences in physical activity between patients in two European countries.

Method: The short International Physical Activity Questionnaire (IPAQ) was used to assess the physical activity during the previous week. Data was collected during April-July 2013 in Swedish and Spanish HF patients. In Swedish patients also motivation to exercise (motivation to exercise index) and potential barriers (exercise self-efficacy scale) and factors related to physical activity levels were examined. Difference were analysed using Pearson's chi-square or Mann-Whitney U test.

Results: In total, 154 Swedish and 548 Spanish HF patients (29% female, mean age 69±12 years, 75% NYHA-class II/19% NYHA III) participated. Of these HF patients, 16% had a high physical activity (at least one hour per day of moderate-intensity activity or half an hour of vigorous-intensity activity); 49% had moderate physical activity (at least 30 minutes of moderate intensity physical activity on most days) and 30% of the patients had low physical activity. More patients in Sweden had a high physical activity level compared to patients in Spain (26 vs 15%, $p < 0.001$).

The highest motivations to exercise were: (1) I want to be healthier and perhaps live longer; (2) I want to a slower ageing process and feel younger; and (3) Exercise increases my general feeling of well-being. The highest potential barriers were: (1) Working long hours; (2) Feeling physical tired; and (3) Experiencing symptoms. Patients with a high physical activity had a higher educational level (23% vs 11 higher than secondary school p -value < 0.04), higher exercise self-efficacy (median (Q1-Q3) 4 (3, 4, 6) vs 2 (1, 2, 3), p -value < 0.001) and exercise motivation (median (Q1-Q3) 2 (2, 2, 3) vs 1 (1, 1, 2), $p < 0.001$) compared to patients with low physical activity.

Conclusions: Despite that most of the patients were in NYHA class II, one third of them had a low physical activity level in their daily life. We found differences between Spain and Sweden, which need to be further explored. Motivations, self-efficacy and educational level were important factors in physical activity.

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Implementing guideline interventions to improve patient care in heart failure

J Oliver,¹ J Beezer,¹ J Baxter¹ and S McClure¹

¹City Hospitals Sunderland Nhs Foundation Trust, Sunderland, United Kingdom

Purpose: Findings from our National Heart Failure Audit have shown that patients with heart failure that are not admitted to a cardiology ward have a poorer survival rate,

11.1% compared to 7.8%. The purpose of this study was to improve heart failure care by ensuring all patients admitted to a general hospital with heart failure received a core set of target interventions

Methods: A heart failure team consisting of 1 nurse, 1 pharmacist with support from a cardiologist and geriatrician with a special interest in heart failure visited wards to find patients admitted with heart failure

A core set of targets incorporating National (NICE) quality standards were used to improve care for patients admitted with heart failure regardless of where they were admitted in the hospital.

The targets were:

1. All patients receive and ECHO
2. All patients receive ACEI/ARB on discharge unless contra-indicated
3. All Patients receive Beta-blocker on discharge unless contra-indicated
4. All patients are seen by a member of the inpatient service during their inpatient stay
5. All patients receive a clinical management plan on discharge
6. All patients have follow-up with the heart failure service within 2 weeks

Data was collected retrospectively from patients notes coded with heart failure during their admission. This data was collected and submitted for the national data base. The data prior to the establishment of the inpatient heart failure service was compared to the data after the inpatient heart failure service was set up.

Results: see table below

Conclusion: Implementing key guideline targets can improve the treatment and management of heart failure patients by an inpatient heart failure service

Table 1. Service evaluation 2011 - 2013.

	2011/2012	2012/2013
% patients with echo	85	96
% assessed for ACE/ARB	81	83
% assessed for Beta blocker	77	87
% managed by a cardiologist	24	38
% followed up in cardiology clinic	50	64
% referred to H/F liaison service	31	73
In patient mortality %	13	8
30 day readmission rate %	24	15

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Heart failure self-care in Aotearoa/New Zealand

S Inkrot,¹ G Gamble,² T Jaarsma,³ H Mcgrinder⁴ and G Devlin¹

¹Department of Cardiology, Waikato District Health Board, Hamilton, New Zealand ²The University of Auckland, Auckland, New Zealand ³Linköping University, Department of Social and Welfare Studies, Linköping, Sweden ⁴Auckland City Hospital, Auckland, New Zealand

Purpose: Self-care is known to contribute to outcome in heart failure (HF) patients. International comparisons indicate that self-care behaviours could be improved worldwide. Excess in HF mortality amongst ethnic minority groups is likely to be multifactorial, including cultural and historical factors. HF self-care amongst Maori has not been studied. Our analysis describes HF self-care in Aotearoa/New Zealand (NZ) and aims to identify potential differences between Maori and New Zealand Europeans (NZE).

Methods: We added self-care assessment to the nationwide NZ HF Registry at 3-month follow-up post admission with acute or decompensated chronic HF, using the 9-item European Heart Failure Self-care Behaviour Scale (EHFScBS-9). On a scale of 0-100, higher scores indicate better self-care. We analysed differences between Maori and NZE using bivariate analysis. We used logistic regression to assess factors predicting better than median self-care scores.

Results: Of $n = 235$ who completed baseline and follow-up visits between December 2013-September 2014, self-care data was available for $n = 107$ [24% Maori; mean age 73, 38% female, mean EF 28%]. We found no difference in mean self-care scores between Maori vs NZE [64 ± 15 vs 58 ± 17 , $p = 0.12$]. In logistic regression including age, sex, ethnicity, symptoms, medication, and education factors, only providing patients with a target dry weight range according to which they could adjust their flexible diuretic regimen, and outpatient referral were associated with better self-care [OR 5.86, 95%CI 1.15-29.91, $p = 0.033$; OR 6.01, 95%CI 1.71-21.11, $p = 0.005$]. Dyspnoea and ankle oedema at baseline were associated with worse self-care at follow-up [OR 0.11, 95%CI 0.02-0.80, $p = 0.030$; OR 0.34, 95%CI 0.14-0.84, $p = 0.019$].

Conclusions: Despite clinical differences and greater illness severity, Maori display similar self-care skills as NZE. Overall, self-care scores could be improved. Our data suggest that providing patients with the tools to self-care (eg. providing target weight range) and ensuring outpatient follow-up are imperative.

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The multidisciplinary forum: what do heart failure nurses bring to the table?

G O'Regan,¹ S Chipping,¹ J Rayner-Barton,¹ D Relaeng,¹ D Davies¹ and JM Beattie¹

¹Heart of England NHS Trust, Birmingham, United Kingdom

Purpose: Multidisciplinary team (MDT) working is known to improve the care of those with heart failure

(HF). We hold monthly MDT meetings to discuss management issues relating to HF patients attending our hospital or community service. We examined the concerns which prompted HF specialist nurses to seek advice.

Methods: We undertook a retrospective review of our MDT database on patients reviewed between April 2010 and October 2014. Over this period we carried out 343 discussions on 256 sequential patients (174 male) exhibiting HF with reduced ejection fraction (HFREF), their treatment based on European Society of Cardiology guidelines. The mean age of this cohort was 70 years (range 30 - 91). Of these, 196 were the subject of a single discussion, 43 were discussed twice, 12 three times, and the policy on 5 patients was reviewed five times. 58 (23%) of these patients died over the above period.

Results: For patients discussed several times, different topics came up. However, for each patient, a principal issue tended to be consistent.

Conclusions: The spectrum of subjects discussed reflects the complexity of HF and the sometimes burdensome comprehensive evidence-based care to be considered for those with HFREF. That medication related questions dominated the process is not unexpected. While HF nurses are often independent prescribers, they are dealing with relatively elderly people with several comorbidities who may exhibit significant biochemical derangement. Consideration for device therapy or cardiac surgery and ultimately palliation reflects the stepwise decline typical of the HF disease trajectory. This MDT dialogue facilitates expert review, inter-professional learning, and the provision of optimal HF care across the disease course in both hospital and community settings.

Table 1. Hierarchy of discussion themes.

Medication issues	66
General HF management	41
Further investigation	40
Comorbidities / cardiorenal	35
Device therapy	26
Cardiac surgery / transplant	20
Arrhythmias / cardioversion	20
Palliative care	8

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Patient-caregiver dyadic determinants of self-care maintenance and self-care management in heart failure

E Vellone,¹ JT Bidwell,² KS Lyons,² F D'agostino,¹ SO Hiatt,² R Juarez-Vela,³ R Alvaro,¹ B Riegel⁴ and CS Lee²

¹University of Rome Tor Vergata, Biomedicine and Prevention, Rome, Italy ²Oregon Health & Science University, School of Nursing, Portland, United States of America ³University of San Jorge, Zaragoza, Spain ⁴University of Pennsylvania, School of Nursing, Philadelphia, United States of America

Purpose: Heart failure (HF) is a chronic syndrome that impairs quality of life (QOL) and requires tremendous health-care resource utilization. To improve outcomes, patients with HF should engage in self-care behaviors to maintain stability (self-care maintenance) and intervene to treat symptoms of HF exacerbations (self-care management). Patients and caregivers are both involved in HF care; but, the determinants of self-care maintenance and self-care management in patient-caregiver dyads are largely unknown. The aim of this study was to identify patient-, caregiver-, and dyad-level determinants of patient and caregiver contributions to self-care maintenance and management.

Methods: A multivariate multilevel modeling was used to analyze data from an Italian multi-center cross-sectional study of HF patients and their primary caregivers. The following measures were considered for analysis: patients' and caregivers' contributions to self-care, quality of life, and sociodemographic characteristics; patients' clinical conditions, activity of daily living (ADL), and cognition; and caregivers' burden and social support. Patients and caregivers also rated the quality of their relationship.

Results: A sample of 364 patient-caregiver dyads were considered. Patients and caregivers were 76 ± 11 and 57 ± 15 years old respectively. Patients were predominantly male (57%) and caregivers were predominantly female (52%). Most patients had NYHA class II and III (69%). Better patient self-care maintenance was determined by lower patient physical QOL, more comorbid conditions, higher patient impairment in ADL, better cognition, fewer hospitalizations, worse HF-specific emotional QOL, female caregiver gender, better patient-reported relationship quality, and better caregiver social support. Better caregiver self-care maintenance contribution was determined by longer HF duration and worse patient HF-specific emotional QOL. Better patient self-care management was determined by patient female gender, better cognition, worse caregiver physical QOL, and better patient-reported relationship quality. Better caregiver self-care management contribution was determined by better patient physical QOL, fewer comorbid conditions, greater number of hospitalizations, non-spousal relationship, better caregiver-reported relationship quality and better caregiver social support.

Conclusion: A combination of patient, caregiver, and dyadic characteristics predicted both patient and caregiver contributions to self-care. These characteristics can be used by practitioners to tailor interventions for HF patient-caregiver dyads.

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Differences in self-reported sleep and insomnia between octogenarians after surgical or transcatheter aortic valve replacement

H A Amofah,¹ A Brostrom,² B Fridlund,² B Bjorvatn,³ R Haaverstad,¹ KO Hufthammer,⁴ KKJ Kuiper,¹ AH Ranhof⁴ and TM Norekval¹

¹Haukeland University Hospital, Department of Heart Disease, Bergen, Norway ²School of Health Sciences, Jonkoping, Sweden ³Norwegian Institute of Public Health, Bergen, Norway ⁴Haukeland University Hospital, Centre for Clinical research, Bergen, Norway

Background: Octogenarians are an increasing group of patients admitted for surgical aortic valve replacement (SAVR) or transcatheter aortic valve implantation (TAVI). Younger patients have decreased sleep after cardiac surgery, but little is known about sleep in the post-operative phase within the octogenarians and patients after TAVI. Aims were to determine and compare self-reported sleep and insomnia in octogenarians undergoing SAVR or TAVI.

Methods: A prospective cohort study was conducted at a university hospital including patients of age 80+ undergoing SAVR or TAVI. Data were collected at baseline and during the first five post-operative days. Self-assessment scales; the Sleep Sufficiency Index (SSI) and the Minimal Insomnia Symptom Scale (MISS) were used to register sleep and insomnia.

Results: In all 143 patients were included, whereof 78 SAVR and 65 TAVI. Mean age was 84 years, 58% were in NYHA class III, and mean score on Charlson's comorbidity index was 2.1. Initially SAVR patients reported a low occurrence of insomnia (5% had moderate/severe problems the 1st night) and good sleep (SSI 107% the 1st night). However, the occurrence of insomnia increased (32%; 5th night) and the sleep became poorer (SSI 81%; 5th night) in the late post-operative phase. Initially TAVI patients had a high occurrence of insomnia (23% had moderate/severe problems the 1st night) and poor self-reported sleep (SSI 79% the 1st night). The occurrence of insomnia decreased slightly (18%; 5th night), but the sleep sufficiency was unchanged (SSI 77%; 5th night). There were significant differences between the two groups for difficulties initiating sleep ($p = 0.004$ 1st night), maintaining sleep ($p < 0.001$ 1st night, and $p = 0.003$ 3rd night) and non-restorative sleep ($p = 0.005$ 1st night).

Conclusion: For SAVR patients the self-reported sleep and insomnia were most disturbed in the late post-operative period while for TAVI patients it was most disturbed in the early post-operative period. Improvement of self-reported sleep and insomnia should be sought.

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Home care interventions that reduced readmission for an elderly patient living alone with heart failure: a case report

H Iizuka¹¹Kameda Medical Center, Department of Nursing, Kamogawa, Japan

Background: In Japan, as the number of elderly population is increasing, we anticipate that the number of heart failure (HF) patients would increase proportionately. Because patients with HF have high rate of rehospitalization, case finding and early interventions are essential. In this study, we established a team to identify hospitalized patients who are at high risk for readmission due to living alone with HF, and to provide home care interventions. Among twelve patients identified who showed risks, we have begun home care interventions. The following reports one of the above patients group.

Purpose: This is a case report to determine the effects of risk identification and early interventions to reduce the number of recidivism of an elderly patient living alone at home with HF.

Method: A female patient, 89 years old, living alone at her own home was the subject of this study. She was diagnosed with Mitral regurgitation degree 3, having recommended for surgery with valve replacement, but refused and is currently receiving medications. She is capable of caring for herself, being able to dress and cook. However, she was readmitted five times in one year for HF exacerbation. The cause of HF exacerbation was thought to be due to weight gain and housework overload. She prefers not to use home assistance. Because she was considered a high risk for further readmission, it was decided that she was a candidate for home care interventions. Home care was delivered by a visiting nurse to monitor symptoms and body weight, as well as to educate. Home visits were made once every two weeks after discharge. During home visits, when worsening of HF symptoms, i.e., weight gain and or edema, the nurse checked a BNP level according to a protocol and contacted the cardiologist immediately by phone. Following communication with the cardiologist, medication dosages were adjusted and clinic appointments were made.

Result: Prior to home care interventions where only routine follow-ups were done by a cardiologist in the clinic, the length of hospital stay for this patient was 13.4 days and hospitalization for HF occurring five times in one year. However, after home care interventions have begun the length of stay was reduced to 5.5 days with the total number of recidivism dropping to twice during one year.

Conclusion: This case study revealed that the number of recidivism and the length of hospital stay for this elderly HF patient were significantly lower with the home care interventions compared to that over routine follow-ups by a cardiologist.

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Psychometric validation of the caregiver burden questionnaire for heart failure (CBQ-HF v4.0)

A Stromberg,¹ N Bonner,² L Grant,² B Bennett,² M Chung,³ T Jaarsma,⁴ F Calado⁵ and C Deschaseaux⁵

¹Linköping University, Department of Medical and Health Sciences, Linköping, Sweden ²Adelphi Values Ltd, Endpoint Development and Outcomes Assessment, Bollington, United Kingdom ³University of Kentucky, Lexington, United States of America ⁴Linköping University, Department of Social and Welfare Studies, Linköping, Sweden ⁵Novartis Pharma AG, Basel, Switzerland

Purpose: The symptoms and impact associated with chronic heart failure (CHF) as well as a complex treatment regimen often result in patients becoming progressively dependent on support from caregivers. The role of the caregiver in supporting patients with CHF is increasingly recognized worldwide, and the burden associated with caregiving is a growing consideration. The Caregiver Burden Questionnaire for Heart Failure (CBQ-HF) was developed as a robust, objective tool to measure perceived burden, for caregivers of CHF patients. The 24-item instrument was developed, and confirmed to have face and content validity based on qualitative interviews with 24 caregivers. The purpose of this study was to examine reliability and validity, develop a scoring algorithm and assess the psychometric properties of the CBQ-HF version 4.0.

Methods: 150 caregiver and patient dyads in the US were recruited to participate in this longitudinal, observational study. Patient CHF diagnosis was confirmed by a clinician. Caregivers and patients attended three study visits; baseline, day 30 and day 90. Data was collected at each of these study visits to assess test-retest reliability and responsiveness of the CBQ-HF. Caregivers completed the CBQ-HF along with other validated measures of caregiver burden including the caregiver reaction assessment and work productivity and activity impairment questionnaire to assess concurrent validity. Patients and caregivers completed generic measures of health outcomes, and patients also completed assessments of functioning associated with CHF and a symptom diary. The first stage of the analysis was to finalize the items and structure of the CBQ-HF. The second stage of the analysis was to assess validity, reliability and responsiveness of the measure and the final stage was to assess the sensitivity of the CHQ-HF based on changes in the patients' condition.

Results: In this ongoing study, a total of 150 patients and 150 caregivers completed the baseline instruments. At baseline the mean age of the caregivers was 56.7 years (SD = 14.7) and mean age of patients was 68.9 years (SD = 12.7). 75% of caregivers and 48% of patients were female. Most commonly the caregiver was a spouse (45%) or child (32%) of the patient. Among the patients, 44% were New York Heart Association (NYHA) class II, 47% were class III and 8% were class IV.

Conclusion: This study will allow the scoring methods and psychometric properties of the CBQ-HF to be explored and ultimately support the use of the instrument in future studies to assess perceived burden of caregivers of CHF patients.

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Symptom burden in heart failure and cancer outpatients. Results from a cross-sectional study.

M Gullvag,¹ R Mo,¹ M Thronaes,² OM Vagnhildhaug,² AK Knudsen,² S Kaasa² and K H Gjeilo¹

¹St Olavs Hospital, Dept. of Cardiology, Trondheim, Norway ²Norwegian University of Science and Technology (NTNU), European Palliative Care Research Centre (PRC), Dept. of Cancer Research and Molecular Medicine, Trondheim, Norway

Purpose: Heart failure (HF) is a chronic condition associated with a number of symptoms. Recent studies suggest that some of the symptoms typical for HF are comparable with symptoms among cancer patients. Pain, in particular, is reported to be a significant, but often under-recognized symptom in HF patients. However, there is lacking knowledge concerning pain and other symptoms like fatigue and depression/anxiety in HF patients and how this affects the patients. Hence, the purpose of this study was to assess the symptom burden in HF outpatients.

Methods: A cross-sectional study was conducted in HF patients and cancer patients at outpatient clinics, during predefined days in 2013/14. Patients completed a questionnaire concerning pain, fatigue, depression, anxiety and performance status. The questionnaire was based on Brief Pain Inventory (BPI), Chalders Fatigue Questionnaire (CFQ), Patient health questionnaire for Depression and Anxiety (PHQ-4) and the Karnofsky Performance Scale. Data on disease and treatment were collected by health care providers.

Results: Thirty-one HF patients and 399 cancer patients (mean age 70.5±9.6 vs. 62.1±13.6, $p < 0.0001$, 36% vs. 49% females, $p = 0.19$) were included. The HF patients had a median NYHA-class 2 (range 1-3) and mean left ventricular ejection fraction of 31±11%. Patients were adequately treated according to European guidelines (94% ACE-inhibitors /angiotensin II receptor blockers, 65% aldosteron-antagonists, 94% beta-blockers and 65% loop diuretics). Forty-two percent of the cancer patients had metastatic disease. Pain was reported by 48% of HF patients and by 34% of cancer patients ($p = 0.17$). Average pain intensity on a numeric rating scale (0-10) was 5.0 and 3.6 for HF and cancer patients, respectively ($p = 0.045$). There were no statistical significant differences between HF and cancer patients in fatigue, performance status, depression or anxiety.

Conclusion: Symptom burden in HF patients was high and comparable to cancer patients in this cross-sectional study. Reported pain was even higher in HF than in cancer patients. The present study indicates that symptom assessment should be performed in HF patients, aimed at better symptom control and improved quality of life.

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Prevalence of chronic kidney disease in patients with congestive heart failure at heart failure outpatient clinic

R Losic¹ and SB Bevc¹

¹University Medical Centre Maribor, Department of Cardiology and angiologijo, Clinical Department of Internal Medicine, University Medic, Maribor, Slovenia

Background: Congestive heart failure (CHF) and chronic kidney disease (CKD) represent a public health problem. Cardiovascular disease is the main cause of morbidity and mortality in CKD patients and renal dysfunction has impact on the prognosis, duration of hospitalisation and cardiovascular events and complication in CHF patients. Glomerular filtration rate (GFR) is essential for evaluation of kidney function and despite disadvantages; serum creatinine has become the most commonly used marker to estimate GFR in clinical practice. The current Kidney Disease Outcomes Quality Initiative (K/DOQI) guidelines emphasize the need to assess kidney function using predictive formulas and define CKD as GFR less than 60 ml/min/1.73m² for 3 months or more, irrespective of cause.

The aim of our study was to define the prevalence of CKD in CHF patients at the control at Heart failure outpatient clinic.

Patients and methods: 72 adult CHF patients: 16 (22.2%) women; 56 (77.8%) men, aged 63.6±13.3 years (rang from 26 to 87 year), were included. All patients were treated at University medical Centre Maribor during the year 2014 and after hospitalisation referred to control at our Heart failure outpatient clinic. In each patient serum creatinine (IDMS traceable method) was determined at least twice in a period of more than three months. GFR was calculated using the abbreviated MDRD formula.

Results: The mean serum creatinine was 107.6±48.8 mmol/l (range from 58 to 381.5), mean calculated creatinine clearance from MDRD formula was 72.3± 29.8 ml/min/1.73m² (range from 15.4 to 153.89). In 36 (50%) patients serum creatinine values were above upper normal range (97 mmol/l). In 29 (40%) patients estimated GFR confirmed CKD (defined as MDRD under 60 ml/min/1.73m² (CKD stage 3-5)). In 25 patients estimated GFR was between 60 and 30 ml/min/1.73m² (CKD stage 3), in 3 patients estimated GFR was between 30 and 15 ml/min/1.73m² (CKD stage 4)

and only 1 patients reached the pre-dialysis stage 5 of CKD (< 15 ml/min/1.73m²).

Conclusions: In our study high prevalence of CKD in CHF patients was confirmed. In response to high prevalence of CKD physicians and nurses at Heart failure outpatient clinic should act interdisciplinary. They have to focus on the prevention, early detection of renal failure and appropriate drug therapy and nutritional management in patients with CHF.

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Knowledge and satisfaction of hospitalized heart failure patients after a single educational session

S Bischoff¹

¹Bern University Hospital, Cardiology / angiology, Bern, Switzerland

Purpose: Patient education has been shown to be an important component of heart failure (HF) management. Specially trained HF nurses have provided education to all patients hospitalized with HF in one university hospital since 2003. This practice was evaluated in 2014. The aim of the study was to investigate the effectiveness of a single educational session relating to the patients' knowledge about HF and self-management and to determine satisfaction with the education received.

Methods: Fifty-four HF patients, who had not previously received a HF education, were consecutively enrolled in the study. Patients first completed a German version of the Dutch Heart Failure Knowledge Scale and then received a standardized HF education from specially trained nurses. Three days later, or at discharge (if discharged earlier), patients were asked to once again complete the Dutch Heart Failure Knowledge Scale and a hospital-developed questionnaire about satisfaction with the education received.

Results: Of the 54 patients attending the educational session, 42 (77.8%) completed all questionnaires. The majority were male (83.3%), mean age was 58.9 years (+/- 14.1), mean Brain Natriuretic Peptide was 1362.7 pg/ml (+/- 1318.2) and the majority were in NYHA II-III (68.2%). Knowledge after a single educational session increased significantly (12.05 vs. 13.5, $p = .000$). Questions on weighing, taking medications, actions if signs/symptoms of decompensation occur were answered correctly by at least 97.6% of the patients. 21.9% of the patients rated the received education as excellent, 53.7% as very good, 19.5% as good and 4.9% as mediocre. 75.6% would of course recommend the educational session to family and friends, 24.4% probably. Patients benefited most from information about diet, and also frequently answered that "there isn't one best part, it's the whole package that helps." Information considered valuable was: "the relation between fluid, weight and respiration", lifestyle changes and medication. Most of the patients did not recommend any changes to the education. The most

frequently mentioned concerns were the timing of the educational session and planning sufficient time.

Conclusion: HF patients have more knowledge about HF and its self-management after a single educational session through a specially trained nurse, and satisfaction with received education is high. These results argue for a continuation of the current educational practice but further research regarding behavior of patients at home, hospital readmission, mortality, quality of life and costs is needed.

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The use of eplerenone post ST-segment elevation myocardial infarction (STEMI): are we following the guidelines?

M Marathe¹ and S Khan¹

¹Queen Elizabeth Hospital Birmingham, Cardiology, Birmingham, United Kingdom

Purpose: The EPHEBUS trial showed there was a significant improvement in mortality with the use of eplerenone following STEMI in patients with reduced ejection fraction and clinical signs of heart failure. NICE have also endorsed the use of eplerenone in its recently updated 2013 guidance. We wanted to audit the use of eplerenone in our cardiology department to see if we were using this drug according to current recommendations.

Methods: We collected data on all STEMI patients admitted between January 2013 and end December 2014, in total there were 214 patients who were treated with primary PCI for STEMI. Their clinical parameters, chest X-ray, medication and discharge documentation from the hospital's electronic database were obtained to determine whether these patients had clinical evidence of heart failure. All patients underwent echocardiography and patients were stratified on the basis of their LV function with an impaired LV defined as LVEF < 40%.

Results: There were 13 patients eligible for eplerenone according to NICE guidance however only 4 of these patients were prescribed eplerenone. Out of 23 patients who had LVEF < 40% but no signs of heart failure, 13 were prescribed eplerenone. In addition, out of 15 cardiology juniors (FY1 – CT2) questioned, 6 were aware that eplerenone should be used in post STEMI patients with poor LVEF, but none were aware that the guidelines specify that there should be poor LVEF & clinical signs or symptoms of heart failure. Echocardiograms were all performed and reported within 72 hours which gave adequate time for the initiation of eplerenone prior to discharge.

Conclusion: We have found an inconsistent use of eplerenone for STEMI patients in our department. Most of the patients who did not require eplerenone according to guidelines were given this drug. However some of the

patients who did merit this drug never got it. This can be partly attributed to the low level of awareness of this drug amongst junior doctors. The availability of echocardiographic data does not appear to affect whether eplerenone prescription is given.

After presentation at the departmental meeting, there was a consensus to adhere more closely to the guidelines and to educate the junior doctors as well.

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Impact of a nurse-led management program on heart failure quality indicators

U Stojanovic¹ and K Jansa Trontelj¹

¹University Medical Centre of Ljubljana, Vascular Medicine, Ljubljana, Slovenia

Background: Heart failure management requires continuous patient education and monitoring. Nurse-led heart failure management programs provide potential means for improving management of patients with chronic heart failure.

Aim: To assess the impact of nurse-led heart failure management program on quality indicators of heart failure management.

Methods: Outpatients attending the heart failure outpatient clinic of the department of vascular medicine at a university clinical center were enrolled into a nurse-led heart failure management program, and compared to usual care. The program consisted of: education and lifestyle counseling, cardioprotective medicine titration and monitoring. Quality indicators of heart failure management (i.e. number of patients achieving optimal therapy and maintaining weight) are collected from patient records before and after the study period of 6 months.

Results: A total of 100 records were reviewed: 50 from patients in the nurse-led management program (with an average of 4 outpatient visit) and 50 controls. There was no difference in age (mean 80 years) or gender (39% female). Patients in the intervention group were more likely to reach optimal dose of ACE inhibitor (38 vs. 18%, $p = 0.002$), while other medication was comparable between the two groups. More importantly, in the intervention group only 12% of patients experienced weight gain as opposed to 42% in the control group ($p < 0.001$).

Conclusion: Nurse-led heart failure management program improves management of patients with chronic heart failure.

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The predictive role of the pattern of endothelial-derived microparticles in heart failure patients

A Berezin¹ and A Kremzer¹

¹State Medical University, Zaporozhye, Ukraine

Background: Chronic heart failure (CHF) is becoming a leading cause of cardiovascular morbidity and mortality worldwide. The endothelium is considered an important target for traditional risk factors and endothelial dysfunction remained independently associated with mortality from CHF. Endothelial-derived microparticles with different origins are considered a marker of endothelial injury and repair of vasculature.

The study aim was to evaluate whether circulating microparticles with apoptotic or non-apoptotic phenotypes are useful for risk assessment of three-year cumulative fatal and non-fatal cardiovascular events in CHF patients.

Methods: It was studied prospectively the incidence of fatal and non-fatal cardiovascular events, as well as the frequency of occurrence of death from any cause in a cohort of 388 patients with CHF during 3 years of observation. Circulating levels of NT-pro brain natriuretic peptide (NT-pro-BNP), high-sensitivity C-reactive protein (hs-CRP), endothelial apoptotic microparticles (EMPs) were measured at baseline.

Results: The study population consisted of 388 consecutive patients with CHF who underwent angiography or PCI between April 2010 to June 2014, as well as were referred as post-myocardial infarction subjects within this period. All these patients were selected from 1427 patients according to our inclusion and exclusion criteria. Median follow-up was of 2.32 years (interquartile range = 1.8-3.1). During follow-up, 110 cardiovascular events (including 43 fatal cases) were determined. Additionally, 74 subjects were hospitalized repeatedly due to worsening CHF and also 16 subjects were readmitted in the hospital due to other cardiovascular reasons. In the univariate logistic regression analysis, the main factors independently related with cumulative end-points were creatinine, fasting glucose, HbA1c, total cholesterol, uric acid various types of EMPs, NT-pro-BNP, hs-CRP, NYHA class, decreased left ventricular ejection fraction (LVEF) less 45%, and type 2 diabetes mellitus. In multivariate model NYHA class, decreased LVEF (less 45%), NT-pro-BNP, hs-CRP, CD144+/CD31+/annexin V+ EMPs, and CD31+/annexin V+ EMPs remained statistically significant for cumulative end-point. Adding of CD144+/CD31+/annexin V+ EMPs and CD31+/annexin V+ EMPs to the standard ABC model may improve the relative IDI for cumulative end-point by 11.4% and 10.5% respectively.

Conclusion: Apoptotic phenotype of circulating microparticles may relate three-year combined clinical outcomes in CHF patients.

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Nursing problems in patients with mechanical heart assist devices.

E Molka,¹ I Cogiel,² A Szlag,² A Zielinska-Meus,² K Oleszczyk,² K Bugajska-Sysiak² and B Wolniczek²

¹7-th Clinical Hospital of the Silesian Medical University in Katowice, Katowice, Poland ²Upper Silesian Rehabilitation Center Repty, Tarnowskie Gory, Poland

Introduction: Mechanical support of the heart is a treatment of severe heart failure. It can be used as a bridge to decision on the treatment, a bridge - until transplantation, a bridge - until the regeneration of the heart, or destination therapy - when the patient is not eligible for transplantation or is complementary to optimal treatment therapy.

Aims: The aim of this study is to identify the medical problems existing in patients using mechanical support of the heart, in order to prepare educational programs for patients and their carers to fill existing gaps in knowledge.

Material and methods: Patients group consisted of 21 patients with left ventricular assist device (Heart Ware 72%; Heart Mate II 28%). Patients with left ventricular mechanical assistance devices were hospitalized from march 2010 to september 2014. Each patient had individual care program based on documentation developed in a nursing facility.

Results: Age: mean 51 years; length of hospital stay: medium - 20 days; time of admission - since the left ventricular assist device implantation - an average of 44 days . Blood pressure: the majority of patients low values: 90-80 / 60-50 mmHg; peripheral pulse: the majority of patients undetectable or very weak; weight: body-weight daily measurement underwent daily fluctuations in the range - an average of 1 kg, 24% of patients experienced weight gain (2-3 kg); BMI patients: an average BMI 26 kg / m²; Observation of swelling: the appearance, increase in 52% of patients oedema of lower limbs ; Dyspnea: observation in the direction of onset, severity of dyspnea, cough, 1 patient with dyspnea on exertion. Echocardiography performed in each patient 2 times: assessment of systolic function of the left ventricle: at admission: EF least 10%; EF most 35%, before discharge: EF least 10 - 12%, the highest 45% EF, in 43% of patients had fluid in the pericardium, in 57% of patients in the pleural spaces; Anticoagulation daily measurement of INR- maintained: 2,0 - 3,0; Wound: dressings performed every 2-3 days in 38% of patients experienced a slight redness, 1 patient in the third day after admission were found inflammation around the "driveline". Conducted in the field of patient education.

Conclusion: Patients found themselves in the new reality by receiving a bridge between the present life with the possibility of waiting for a heart transplant. That require a comprehensive education in the driveline care and self-observation for symptoms of heart failure. Education is absolutely essential to enable family members to support and assist the patient in the home.

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Difficulties in identification of sleep disordered breathing in the context of a disease management program for HF

A Brostrom,¹ U Alehagen,² M Vrethem,³ E Svanborg³ and P Johansson²

¹Jonkoping University, School of Health Sciences, Department of Nursing Science, Jonkoping, Sweden ²Faculty of Health Sciences Linköping University, Sweden, Linköping, Sweden ³Department of Clinical Neurophysiology, Linköping University Hospital, Sweden, Linköping, Sweden

Purpose: Sleep disordered breathing (SDB) is prevalent in patients with heart failure (HF). Clinical signs may overlap and a need of SDB treatment can therefore be missed. The aim was to describe the care process of two patients with HF involved in a disease management programme (DMP) for HF, focusing on the difficulties to identify and initiate treatment of SDB.

Methods: A prospective case study design was used to follow clinical signs, symptoms and lab tests for one male (70 yrs) and one female (74 yrs) patient during 18 months at a university hospital. LVEF was determined by echocardiography. Laboratory data, N-terminal fragment of proBNP (NT-proBNP), chloride, potassium and creatinine were collected and measured according to local guidelines at the University hospital. Polygraphy recordings to detect SDB were scored according to American Academy of Sleep Medicine criteria. The Epworth sleepiness scale was used to measure excessive daytime sleepiness.

Results: It took 5 to 10 months from diagnosis of HF until optimal HF treatment was reached and 12 to 17 months until SDB treatment was initiated. None of the patients complained of poor sleep, but suffered from fatigue. In the male case, SDB was detected by the wife's complaints of her husband's snoring, apneas and restless sleep. In the female case, SDB was detected after a detailed assessment of fatigue which was shown to be daytime sleepiness. After optimal HF treatment was initiated, both cases cardiac function improved. For the female case, improvements were also found for blood pressure. The male case had a position dependent central sleep apnea with an apnea hypopnea index (AHI) of 16. The male patient had a position dependent obstructive sleep apnea with an AHI of 24. SDB treatment improved both SDB and fatigue for both cases.

Conclusion: The care-process in a DMP for HF is complex and time consuming. Individualized optimal HF treatment requires careful monitoring and a close collaboration between the health-care professional and the patient. A patient centred care and good communication is pivotal to educate and motivate the patient to be adherent to HF treatment, as well as to increase the possibility to identify symptoms caused by SDB in need of specific treatment.

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Predictors of medication adherence using a multidimensional adherence model in patients with heart failure: Moroccan experience

Y Ragbaoui,¹ I Nouamou,¹ A El Hammiri¹ and R Habbal¹¹Ibn Rochd University Hospital, Casablanca, Morocco

Background: The adherence of medical treatment of the chronic cardiac heart failure is recognized world wide as one of the most important issues of the management of this chronic life threatening disease. The demographic and socio-economic particularity of African countries could influence the adherence of the treatment of chronic heart failure in those countries; There is an insufficiency of data on treatment adherence in patients with chronic heart failure (CHF).

Objective: The purpose of this study was to assess adherence to medical treatment and explore factors contributing to medication adherence in Moroccan patients with Heart failure by using the World Health Organization's multidimensional adherence model

Methods and results: Sixty-five patients admitted in the IBN ROCHD University hospital center, who were being treated for cardiac failure, were included.

The assessment of adherence to the medical regime was based on two different scale: the CARDIA-Questionnaire and the Morisky Medication Adherence Scale (MMAS 4-item version).

Information regarding the predictors of medication adherence derived from the multidimensional adherence model was obtained by questionnaire and interview.

Out of 65 patients, 34(53%) vs 55(84%) were compliant respectively in (MMAS 4) and CARDIA-Questionnaire.

Patients who know the exact daily dosage of the drug ($P = 0.032$), patients with depression ($P = 0.05$), and low social support ($p = 0.042$) were less compliant than the rest.

Conclusion: Like several regions in the world, non-adherence to complex CHF treatment is a real problem in Morocco. Different strategies that target these factors may promote medication adherence.

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Nursing care for a patient with implanted TAH device

M Zilic,¹ D Grgurevic¹ and V Pisacic¹¹University Hospital Centre Zagreb, Department of Cardiovascular Diseases, Zagreb, Croatia

Total Artificial Heart (TAH) is a device which is installed in patients with severe biventricular heart failure. TAH replaces the function of left and right ventricular, along with

the heart valve, relieves the symptoms of heart failure, promotes perfusion of vital organs, and improves the quality of patient's life to the very heart transplant procedure.

Case of a 67-year old patient is presented, who was submitted to regular cardiac examinations due to underlying disease, dilated cardiomyopathy. In August 2014 the patient was hospitalized at the Department of Cardiovascular Diseases where a pre-transplantation evaluation was made. Since there was the existence of biventricular cardiomyopathy (in NYHA functional status IV) and irreversibly elevated pulmonary vascular resistance, after discussion with the patient and his family, there was an indication for installing TAH device.

Surgery and early postoperative period of cardiac surgery went without complications. On the fourteenth postoperative day, the patient was transferred to the Department of Intensive Cardiac Care. Nursing care focuses on improving mobility and strengthening physical strength, independence of the patient and prevention of complications. Psychological support of the entire health care team reduces patient's anxiety and fear, helps in creating a positive self-image, and finally, adopting his own health condition. Education of the patient and the family is carried out. It includes adoption of a particular style of life, with measures for preventing infections (with special emphasis on the care the driveline), the application of anticoagulant therapy, acceptance of physical limitations, mastering work with portable pneumatic device and learning patterns of behavior in emergency situations.

After satisfying all the criteria necessary for the independence of the patient, in December 2014, two months after the surgery, the patient was discharged. The patient left the hospital with written instructions to the family doctor and the health visitor, accompanied by the experts from the technical support for practical advice concerning the device.

In the light of the application of modern technology in medicine, the importance of a holistic approach to the patient should not be neglected. Furthermore, good cooperation is crucial not only among the members of the interdisciplinary team who care for the patient, but also between health team-patient-family so the patient could steadily, without complications, and in good shape wait for a heart transplant procedure.

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Effects of isolated obesity on left ventricular functions: A strain and strain rate imaging study

M A Ebada¹¹Mansoura Specialized Medical Hospital (MSMH), Cardiology, Mansoura, Egypt

Background: Obesity is known to be a risk factor for impairment of diastolic left ventricular (LV) function. A

direct effect of weight on Systolic LV function and myocardial structure is not well-established.

Aim: The aim of this study is to determine the effect of isolated obesity on LV Structure and function by using LV standard echocardiographic indices, strain and strain rate imaging indices.

Methods: Sixty-five subjects were enrolled in this study; 45 with isolated obesity (defined as a body mass index \geq 30 kg/m²) with no other cardiovascular comorbidities, and 20 non-obese age and sex-adjusted controls (defined as a body mass index < 30 kg/m²). All subjects underwent standard two-dimensional echocardiography and myocardial strain and strain rate imaging.

Results: There was no significant difference between obese patients and control subjects regarding height [P >0.05]. On the contrary weight, body mass index and waist circumference were significantly higher in obese patients than control subjects [P <0.001]. Obese subjects had significantly increased left atrial diameter, aortic diameter, septal wall thickness, left ventricular posterior wall thickness and LV mass [P <0.001]. There was no significant difference between obese patients and control subjects regarding left ventricular diameter in diastole and systole, ejection fraction, fractional shortening, left ventricular mass index and mitral inflow velocity indices (E, A and E/A ratio) [P >0.05]. Analysis of Left ventricular two dimensional longitudinal strain and strain rate parameters of different LV walls shows significant decrease in global LV longitudinal strain in almost all walls of the LV in obese patients [P <0.05] with more significant decrease in class III obesity. The early diastolic wave (E) measured by strain rate was significantly lower in almost all walls of LV in obese patients [P <0.05] with more significant decrease in class III obesity, conversely the peak systolic wave (S) measured by strain rate was decreased only in the lateral wall of the LV of obese patients. The late diastolic wave (A) measured by strain rate wasn't affected in any class of obesity and its values was similar in obese and control subjects.

Conclusion: Obesity is associated with structural changes in the left ventricle, in the form of increased LA diameter, LV mass, interventricular septum thickness and left ventricular posterior wall thickness and subclinical changes in left ventricle systolic function which can be detected by strain and strain rate imaging even without overt heart disease.

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Prospective study of children with NSAA (Non specific Aortoarteritis): a cauldron of heart failure and other adverse presentations ; yet window of opportunity

H Gupta,¹ S Ramakrishnan,¹ SS Kothari,¹ A Saxena¹ and VK Bahl¹

¹All India Institute of Medical Sciences, Cardiology, New Delhi, India

Purpose: NSAA in children is a rare disease with largely unstudied clinical profile. Diagnostic criteria have not

been accurately validated in this population. Long-term follow up studies are unavailable.

Methods: 28 consecutive children with newly diagnosed NSAA were enrolled over a period of 12 months. Interventions in the form of PTA or PTRA were done wherever indicated. Patients were prospectively followed for a mean duration of 13.5 \pm 6.96 months.

Results: The mean age at presentation was 10 \pm 2.92 years (range 6-15 years). Presenting manifestations were varied with ADHF (acute decompensated heart failure) seen in 14 (50%), being the most common. LV dysfunction was seen in 19(67.8%) with severe LV dysfunction (LVEF<30%) in 15(53.5%). HTN overall was found in 17(60.71%) patients. However, out of the patients who had LV dysfunction only 5(26.63%) had HTN and 3(10.71%) had asymmetric pulses. Rare presentations included B/L cataract, seizures and peripheral embolism. Type 2 NSAA was seen in 18(64.28%) while 8(28.5%) had Type 3 disease. DTA (descending thoracic aorta) involvement was seen in 13(46.4%) and the renal arteries in 12(42.8%). Modified Ishikawa's criteria were met by 21(75%) patients. Mean numbers of major and minor criteria met were 1.29 \pm 0.79 and 2.4 \pm 0.83. Interventions were required in 26(92.8%) patients. Successful PTA was done in 13(92.86%) and PTRA in 6(66.67%) patients. After PTA mean aortic lumen stenosis decreased from 75 \pm 8 to 23 \pm 10 % (p<0.0001) and gradient decreased from 60 \pm 15 to 24 \pm 10 mm of Hg (p<0.0001). In PTRA group the stenosis decreased from mean of 90 \pm 7% to 20 \pm 13% and pressure gradient decreased from 70 \pm 27 to 15 \pm 10 mm of Hg (p <0.001). On follow up, mean NYHA class improved from 3 \pm 1.15 to 1.53 \pm 0.74 (p = 0.0002) and mean EF increased from 26 \pm 10.48 to 42.9 \pm 13%(p<0.0001), with significant decrease in blood pressure. Restenosis was seen in 4 patients. Only 2(7.1%) patients had new vessel involvement and both had active disease.

Conclusion: The clinical profile of NSAA in children is very different from adults. Children present with myriad presentations, which can be deceptive, as classical findings are few. ADHF is the most common presentation and has to be rapidly differentiated from less treatable conditions like DCMP. Type 2 NSAA is probably the commonest in children with DTA followed by renal arteries being the most commonly involved. Diagnostic criteria maintain their high sensitivity even in this population. Early diagnosis and intervention give very gratifying results. Active disease is possibly a risk factor for new vessel involvement and restenosis.

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Cost price of different treatments of acute infarct myocard

DZH Hrustemovic,¹ E Mujicic,¹ M Kulic¹ and E Kevric¹

¹Clinic of Heart and Rheumatic Diseases, Invasive Cardiology, Sarajevo, Bosnia and Herzegovina

Introduction: Given that 52 % of patients with acute myocardial infarction (AMI) dies in prehospital conditions, it is clear that a well-organized hospital service can greatly reduce the number of deaths caused by AMI. Thus the diagnosis and treatment of AMI is based on the education of the laity in recognizing the symptoms, and early phone contacts to the emergency service, education of staff of the emergency service, the rapid admission to the UIC as well as the initiation of fibrinolytic (non-invasive) or invasive therapy (pPCI). There are significant differences in the two treatments in terms of prognosis, treatment and postinfarction events for the benefit of the invasive strategy that these events are significantly reduced.

Objective: Our objective was to compare the two ways of taking care of patients with AMI, checking various factors that influence the outcome in management of patients with acute myocardial infarction in relation to the two comparative methods (conservative-fibrinolytic and aggressive-invasive cardiac) care for AMI in the coronary care unit.

Research sample: The sample included 100 patients with AMI, divided into two groups: experimental group (n = 50), patients treated in the department of interventional cardiology with PCI and control group (n = 50), patients treated conservatively with fibrinolytic therapy in the Department of the Cardiology KCUS.

Methodology: The study was clinical and manipulative, descriptive-analytical, comparative, retrospective-prospective study. The data required for this study were collected from:

anamnesis and disease history, clinical examination of patients and laboratory findings (troponin). The data were entered into separate tables, and later were statistically processed.

Results: The results showed that patients with myocardial infarction treated with PCI method have less complications (23.33 %) have a lower length of stay (5.3 days) and lower total cost of treatment and faster recovery and return to life activities.

Conclusion: Health care of patients with acute myocardial infarction treated with percutaneous coronary intervention is better and better quality compared to patients treated with medications.

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Takotsubo cardiomyopathy

K Pavlovic,¹ A Miljas¹ and K Sutalo¹

¹OPCA Bolnica Dubrovnik, Dubrovnik, Croatia

Introduction: Over the past 30 years scientists were intensively studying direct biological effects of catecholamines on the ventricular myocardium. Since the first description of Takotsubo cardiomyopathy by Sato and his colleagues

from Hiroshima in 1990, this detailed knowledge of myocardial biology and catecholamine has become clinically relevant. Even more case reports and larger cohorts were published after that. Now, there is a national and international registers about this acute heart failure syndrome. Using published cohorts from many different countries, scientist discovered that 1% to 2% off all patients presenting symptoms of ACS have Takotsubo cardiomyopathy. Takotsubo, named by Sato, means octopus (tako) and Japanese fisherman's pot (tsubo). Due to the lack of severe obstructive coronary disease and recovery of macroscopic ventricular function this is initially a benign condition.

Takotsubo cardiomyopathy has been described as an acute, reversible heart failure syndrome. It is increasingly recognized with the access of urgent coronary angiography for patient with acute cardiac chest pain. Patients with Takotsubo are typically postmenopausal women and they frequently experience an extremely stressful triggering event. Patients usually present with features typical of acute myocardial infarction including chest pain, palpitations, dyspnea, increased serum troponin, and acute ECG changes including ST elevation and/or T wave inversion. Characteristic appearance is hypokinesia of the apical and mid-left ventricular myocardium with basal hypercontractility that resembles the Japanese fisherman's octopus pot.

Clinical strategy for Takotsubo patients is to provide supportive care to sustain life and minimize complication until full recovery is achieved. In mild cases, if recovery is rapid and uncomplicated, no treatment is necessary. Takotsubo with evidence of heart failure may require a short using of ACE inhibitors and β – blockers.

Conclusion: There is still much to be understood about this acute cardiac syndrome, which appears much more common than previously thought. Although recently recognized, Takotsubo has probably been around in human society for thousands of years.

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Health care of patients with circulatory support

M Jakovljevic,¹ M Renic¹ and I Filipovic¹

¹University Hospital Centre Zagreb, Department of Cardiology, Zagreb, Croatia

Heart failure (HF) represents emerging health problem in the world. HF is a characterized with insufficiency of the heart as the pump to meet the metabolic needs of the body. If diagnosed and treated early higher quality of life and a longer life expectancy can be achieved. If medical treatment fails and if heart transplant is contraindicated, mechanical circulatory support (MCS) is indicated.

The goal of MCS is to achieve volume unloading of heart cavities and to obtain adequate cardiac output. There are several types of MCS. We have short-term circulatory

support devices which are inserted percutaneously while the implanted ones are indicated for longer support duration. Devices can also be used as “bridge to”- transplant, “bridge to” recovery therapy or as a permanent support in case of heart transplant contraindication. The downsides of MCS represents the need for permanent anticoagulation therapy and all the negative aspect related to infections nad bleeding disorders. These adverse events can significantly reduce patients quality of life.

Concerning medical care for the patient with MCS it is important to say that continuous surveillance of cardiovascular, respiratory and coagulation status are needed as well as education in technical aspects of MCS functioning. Positive communication, medical support, interdisciplinary colaboration, education and skillfull management are needed in order to make sure our patient has adequate medical attention. Patients family support is recognized as important factor in the course of rehabilitation.

Patient and family education as well as colaboration with primary health practitioners are imperative in good patient management. Only well informed patient and his family are able to quickly and adequatly react and report all the complications and therefore prevent their negative effects. Only satisfied patient who is fully engaged in his everyday activities represents a positive motive to drive us in our desire for permanent education in order to improve the quality of medical care, to make us equal and recognizable member of medical team and to make our work appriciated and evaluated concordantly.

Education and behavioural aspects

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Nurses knowledge on heart failure education and self-management principles

B Jankowska-Polanska,¹ M Brzykowska,¹ I Uchmanowicz¹ and M Lisiak¹

¹Medical University of Wroclaw, Health Science Faculty, Wroclaw, Poland

Background: According to guidelines, it is essential in the care of patients with heart failure (HF) to have a multidisciplinary treatment programs designed to improve the quality of life (QoL) and treatment outcomes through the systematization of further observation and control of the clinical status of patients in conjunction with their education, optimization of medical therapy, psychosocial support, and also access to treatment. The key role of educator and coordinator of these programs are assigned to a nurse who must be prepared to undertake this task.

Aim: Assessment of the level of knowledge of nurses on the main principles of health education and preparation of patients with HF to self-care.

Methods: Participants were 227 nurses taking care of patients with HF, working in cardiology departments (129), cardiac intensive care units (48) and family practice (50). In this study Nurses Knowledge of Heart Failure Education Principles Survey was used. The statistical analysis software Statistica 10 T-test and analysis of variance for categorical variables (working setting) and correlation tests (Pearson’s) plus simple linear regression for continuous variables (experience) was used.

Results: The mean heart failure self-care knowledge score was 12.1 (SD 2.7), which corresponds to the percentage of correct responses at the level of 60.4 (SD 13.4) The highest number of correct responses achieved nurses working in the intensive cardiac care units 12.39 (SD 2.7) then in the cardiology departments: 12.3 (SD 2.7). The lowest results achieved nurses working in family doctor practice:10.74 (SD 2.3) ($p < 0.001$). Statistically significant positive correlation was found between nurses knowledge and education ($r = + 0.1399$), the number of post diploma courses ($r = + 0.1483$), and a specialization in cardiovascular nursing ($r = + 0.1457$) ($p < 0.05$).

Conclusion: Unfortunately our results have showed that Polish nurses do not have the adequate knowledge on HF self-care management. Postgraduate education in the field of Cardiovascular Nursing, post diploma courses prepare the best to serve as an educator in multidisciplinary teams in the care of patients with HF.

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Evaluation of the parameters of the euro qol- 5 d questionnaire among patients with ischemic heart disease with normal and elevated bmi

C James,¹ S Ohri,¹ S Tisheva,¹ S Jose² and D Mary Sabu¹

¹Medical University Pleven, Pleven, Bulgaria ²MOSC Medical College, Kolenchery, India

Objective: The epidemic of obesity and obesity related morbidities is an important public health challenge, and is paralleled by growing incidence of metabolic syndrome which acts as a strong and significant risk factor for Ischemic heart disease and other atherosclerotic vascular events. The psychological impact of these chronic conditions can be very disturbing. In practical terms the functional effect of an illness and its therapy upon a patient, as perceived by the patient – could be estimated by introducing the quantitative approach of – Health Related Quality of Life (HRQoL).

Aim: The aim of this study is to evaluate the impact of obesity on quality of life of patients with ischemic heart disease.

Methods: Questionnaire based cross sectional study was conducted among patients with established Coronary

Artery Disease admitted in the Department of Cardiology in the University Hospital. 520 patients who were admitted in the Cardiology Department between 1st of January 2012 and 30th June 2014 with acute coronary syndrome or coronary angiographic or Electrocardiography evidence of ischemic heart disease were included in the study, stratified by age, sex and BMI (normal weight 18.5 – 24.9, overweight 25 – 29.9, obese 30 and above). EuroQol – 5D (EQ-5D) was administered in the patients during their hospital stay. EQ-5D comprises 5 dimensions: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. Each dimension has 5 levels: no problems, slight problems, moderate problems, severe problems and extreme problems. The height, weight and basic laboratory parameters were recorded.

Results: Mean age of the participants was 65.1 ± 10.6 years. Male female ratio was 0.76. The distribution of patients in BMI groups was 36.8%/ 24.4%/ 38.8%. Statistically significant differences between BMI groups were seen in Usual activity ($p = 0.005$) and self-care ($p = 0.044$) dimensions of EQ-5D-5L with poorest outcome in the obese. We have found significantly positive correlation between BMI and usual activities ($R = 0.234$, $p = 0.001$) and between age and anxiety ($R = 0.366$, $p = 0.045$). Mean BMI of patients with extreme problems with extreme problems with usual activities is significantly greater than those with lower intensity of problems. Patients with extreme anxiety tend to have higher mean age.

Conclusion: Our study revealed that Ischemic heart disease patients with obesity had impaired QoL in terms of health, mobility, usual activity, discomfort and anxiety. Hence non-obese ischemic heart disease patients had a better sense of overall wellbeing.

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The effects of scheduled training by the nurses on healthy lifestyle behaviors and the values of metabolic parameters regarding heart failure patients.

S Akdeniz¹ and Z Ozer²

¹Akdeniz University, Vocational School of Health Services, Antalya, Turkey

²Akdeniz University, Faculty of Nursing, Antalya, Turkey

Purpose: This study investigates the effect of trainings on healthy lifestyle behaviors and the values of metabolic parameters on the patients diagnosed with heart failure.

Methods: The study was experimental. Total of 90 heart failure patients (45 interventions and 45 control patients) were tested by using pretest-posttest monitoring models. Personal information forms developed by the researcher were used as the data tools. The following four areas of behaviour were examined: smok-

ing, alcohol consumption, diet and exercise. The values of metabolic parameters include K, Na, Cl, pre-prandial blood glucose, triglyceride requested by the physician were registered for patient in control and experimental group. All data were collected by authors during face-to-face interviews. Before the study, permission was taken from the hospital and patients. The intervention group was trained by planned patient education. The education context used in the study was formed after individual interviews with heart failure patient and literature review. Experimental group was taken individual consultation which was planned according to their needs before discharge by using a heart failure education tool prepared for this study and educational booklet were also given. This group was consulted by telephone once a month. Control group was followed with routine hospital programme. Both groups were evaluated at first interview and at third month.

Results: The mean age of the experimental group was 64 years (SD, 11.4) and most participants were male (64.4%) and the mean ejection fraction was 44% (SD 9.6). The mean age of the controls group was 65 years (SD, 12) and most participants were male (60%) and the mean ejection fraction was 38.17% (SD 8.8). The study revealed that patient education resulted in significant differences between intervention and the control group of patients. At the end of the scheduled training for the patients on healthy lifestyle behaviors and metabolic parameters changed statistically in a positive way in the intervention group ($p < 0.05$). However, no changes were detected in the control group ($p > 0.05$).

Conclusion: Scheduled training had positive effects on healthy lifestyle behaviors and metabolic parameters on the patients diagnosed with heart failure.

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Pharmacists, valuable members of the hypertension management team

EP Edmond Pistja¹ and ATH Alba Themeli¹

¹Medical Health Training Center Santa Maria, medical education, Lezhe, Albania

Objective: To evaluate if a pharmaceutical care program could improve hypertension control in patients diagnosed with hypertension

The aims of the study are:

1. To help patients to better manage their disease by encouraging participation to structured group education for hypertensive patients.
2. To improve blood pressure control in patients with hypertension
3. To improve patients adherence to medication.

Setting: This study was conducted in 4 community pharmacies.

Method : This project evaluates the pharmacist's interventions during a prospective randomized controlled trial, from January 2014 to September 2014.

Patients with a diagnose of hypertension, regular customers of the pharmacies were allocated in a random way either to a control group or to an intervention group during a 9- month period).

The pharmacist interventions, tried to decrease blood pressure and increase medication adherence in these patients. It also involved education sessions and counseling directed to the patient.

Results: A total of 200 hypertensive patients were randomly assigned to the study (100 in the control group and 100 in the intervention group). Although there were no significant differences in both groups regarding gender and their socioeconomic status, at the end of the study, there was a decrease in the blood pressure in the intervention group ($P = 0.005$). Medication adherence was also higher in the intervention group at the end of the study.

Conclusion: Pharmacist intervention can significantly improve medication adherence and blood pressure control in hypertensive patients

Community pharmacists are valuable members of multidisciplinary health care teams in the management of patients with hypertension.

3. 3. Pharmacist have the appropriate knowledge to educate patients with hypertension to help them control their disease.

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Competence in patient education: The perspective of individuals with coronary heart disease

MH Svavarsdottir,¹ AK Sigurdardottir² and A Steinsbekk¹

¹Norwegian University of Science and Technology, Department of Public Health and General Practice, Trondheim, Norway ²University of Akureyri, School of Health Sciences, Akureyri, Iceland

Purpose: The aim of this study was to investigate the views of adults with coronary heart disease on knowledge and skills necessary for health professionals in conducting high-quality patient education.

Methods: This was a qualitative study using semi-structured individual interviews with adults recently diagnosed with coronary heart disease. The informants were asked to describe their view of ideal patient education and the characteristics of someone they perceived as a good educator. The informants were recruited from nurse-led clinic for cardiac patients in Iceland. The data were analysed, using Malterud's systematic text condensation.

Results: The informants were six men and four women who had sustained Myocardial Infarction or undergone elective Percutaneous Coronary Intervention in the previ-

ous 18 months. All informants had received some kind of formal patient education during and/or after their hospital stay. Their average age was 50 years (49-62).

It was seen as fundamental quality in patient education to perceive that health professionals can and are willing to spend time on patient education, and to feel safe to discuss and ask questions. The informants expressed need to receive understandable information about the disease, medical management, prognosis, implications for the future and ways to improve their health.

Majority of the informants felt strongly that individual patient education provided in person was superior to receiving standard education, e.g. brochures or videos. Learning needs and learning preferences of informants varied a lot. So did their preference for communication styles, ranging from preferring a caring and gently educator to strict forward, bluntly speaking educator. Some even suggested that educators should adjust his or her communication style to patient's personality.

Conclusion: According to informants in this study competent educator has good ability to capture the patients learning needs and is able to adjust the patient education to individual needs. The educator needs to be sensitive to patient preferences when selecting communication style. This requires the capability of juggling communication style according to patient personality. Furthermore, an educator needs to be able to adjust discussions and information to patient's level of understanding, and create climate that makes the patient comfortable in asking questions and discussing personal matters.

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Ward nurse's experiences of caring for patients with delirium post cardiac surgery

Y Fu¹

¹St James's hospital, Critical Care department, Dublin, Ireland

Background: Delirium is one of the most frequent complications post cardiac surgery and affects up to 57% of cardiac surgery patients (Maldonado 2008). It is associated with poor patient outcomes such as functional decline, longer hospitalization, institutionalization, greater cost and higher mortality (Fong et al. 2009). As the primary care providers, nurses play a leading role in the prevention, identification and management of delirium. Understanding nurse's experiences will contribute to an improvement of nursing care for this special group of patients (Brajtman et al. 2006).

Aim: The aim of this study is to gain an insight into ward nurses' experiences of caring for patients with delirium post cardiac surgery.

Method: A qualitative descriptive design was employed for the purpose of this study. A total of nine registered staff nurses were recruited through purposive sampling.

Semi-structured one-to-one interviews were conducted for the data collection. Data was analysed using Newell & Bernard's (2011) thematic content analysis framework.

Findings: This study reveals that it is a distressful experience for both patients and nurses in the encounter of delirium. Nurses perceive that patients with delirium experience a wide range of emotional distress and their behaviour is unpredictable. Caring for patients experiencing delirium increases nurses' workload and have a huge impact on their physical and emotional well being. Nevertheless, nurses use a variety of approaches and strategies to manage delirium in order to protect patients and ensure the quality of care. Lack of knowledge, difficulty in communication and lack of resources were identified in this study as the main challenges and barriers that nurses face in the care of delirious patients.

Conclusion: The importance of education and training to improve nurses' knowledge and skills in preventing and managing delirium is highlighted in this study. The implementation of evidence-based clinical guidelines of delirium management is also highly recommended. In addition, collaborative interprofessional teamwork, strong support from nurse managers and active family involvement are essential in supporting nurses to provide effective care for patients with delirium post cardiac surgery.

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Back to normal: striving for a life worth living one year after a cardiac event

P R Tingstrom,¹ A Karner Kohler² and S Nilsson³

¹Linköping University, Department of Medicine and Health, Linköping, Sweden ²Linköping University, Department of social and welfare studies, Norrköping, Sweden ³Linköping University, Primary Health Care and Department of Medical and Health Sciences, Linköping, Sweden

Introduction: Life after a cardiac event could be occupied by a striving to get back to normal. Research has shown that cardiac patients want to take on lifestyle changes but only if they believe that it helps them to live a life worth living. When time passes on patients tend to lose trust in expertise and put more trust in lay epidemiology i.e. lay beliefs of risks and they start to question if adoption of long-term lifestyle changes can guarantee protection of a new cardiac event. Therefore it is interesting to follow patients later on in the rehabilitation phase in order to better understand their rationale for choosing lifestyle.

Aim: to examine patients' beliefs about life in the shadow of a cardiac event one year afterwards

Methods: A qualitative interview study with 17 patients who had coronary heart disease verified about one year ago by myocardial infarction or by treatment with percutaneous coronary intervention and/or coronary artery bypass graft surgery was performed. An inductive approach with conventional content analysis was used.

Results: There are many "haves" and "ought to do" in patients' beliefs about life in the shadow of a cardiac event. These are not necessarily connected to their cardiac disease but rather to cultural demands in the society (i.e. lose weight, eat healthier, stop smoking). There are still doubts about what really caused the cardiac event and stress is commonly believed to be the reason. The effectiveness of the medication treatment is questioned and beliefs such as "you have to be careful with medication" or "medication can benefit one thing but be wrong for another" was brought up. Still there were many positive beliefs about the future such as "life is not over yet" or "one has to prioritise the good things in life".

Conclusion: It seems that the shadow of the cardiac event has faded away and that patients more think of it as a past problem and that they are struggling with lifestyle issues like everybody else. Medication is strongly questioned and some believe that it is not effective any longer. These findings have implications for primary health care, responsible for this group of patients. Few patients expressed insight in living with a chronic disease and therefore it is important for nurses and GPs to be aware of patients' beliefs about their life situation in order to meet them where they are.

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Reasons for implementing a heart failure nurse-led educational program in a university hospital using focus group methodology

J Sousa¹ and H Jose²

¹The Catholic University of Portugal, Institute of Health Science, Porto, Portugal ²Health School of Multiperfil Clinic, Luanda, Angola

Purpose: Heart Failure is a medical condition with growing numbers in developed countries due to increased life expectancy. Because of lack of knowledge about their illness, patients are recurrently admitted in hospital settings to improve their health. For this reason many hospitals already have a Heart Failure clinic, led by an expert nurse in the area, where patients attend an educational programme. In Portugal this reality is not very often present. Therefore the main purpose of this study is to analyse different perspectives from Heart Failure patients, doctors and nurses in order to create an educational programme, in a University Hospital, and later implement it.

Methods: A qualitative method was used in this study, through semi-structured interviews to five Heart Failure patients, two cardiologists and three nurses' experts in the area. These interviews were recorded, verbatim transcript and analysed using NVivo 10 software.

Results: From these interviews four main categories emerged, regarding patient knowledge about Heart Failure: Knowledge about his/her health condition; Health behaviors; How he/her could be helped and Motive for Heart Failure hospital readmission.

Conclusions: Education is a major area that should be focused in hospital settings, in order to prevent patients' readmissions. From these findings it can be inferred that implementing a Heart Failure nurse-lead educational program, patients would receive education about their illness, first signs and symptoms of Heart Failure as well as how to improve their health in order to avoid hospital admissions and to engage in self-care behaviors.

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Beliefs about lifestyle habits one year after a cardiac event differs between patients with cardiac disease and spouses - a qualitative analysis directed from the health belief model

AKK Karner Koehler,¹ SN Nilsson,² TJ Jaarsma¹ and PT Tingstrom²

¹Department of Social- and Welfare studies, Norrköping, Sweden ²Linköping University, Department of Medical and Health Sciences, Linköping, Sweden

Purpose: To examine and compare patients' with CAD and their spouses' beliefs about life style habits 1 year after the cardiac event.

Methods: Four focus-group interviews (n = 11) were performed with patients with CAD verified about 1 year ago by myocardial infarction (MI) or by treatment with percutaneous coronary intervention and/or coronary artery bypass graft surgery. Individual semi-structured interviews were performed with spouses (n = 8). The interviews were taped and transcribed verbatim. A deductive approach was used with directed qualitative content analysis guided by the Health Belief Model as a framework.

Results: The Susceptibility i.e. the risk of having a cardiac event partly corresponded between patients and spouses who believed that e.g. smoking did not always cause a MI, instead additives in groceries were believed as more harmful. The patients differed from the spouses by believing that lack of understanding about CAD made them more susceptible for having a cardiac event. The Self-efficacy of the patients i.e. the belief of the patients' performance of a behaviour advised by health care did not correspond between patients and spouses. The former did not clearly present beliefs about mutual activities as did the spouses. Instead, beliefs about goal-orientation and to comply/not comply with advices were identified. The Benefits of the effect of the advice aiming to reduce the risk of CAD differed between patients and spouses. The former alone believed that stress- and anxiety alleviation could reduce the risk. The Barriers of considerable psychological expenses due to following the health care advice, the patients alone believed the body to be self-healing and should govern without influence of medication. The life lost meaning for missing smoking. Advices and reminders from health care on stop smoking were believed as necessary however, irrel-

evant. The Severity of CAD and its consequences corresponded between patients and spouses who believed that normalisation to an ordinary life were possible despite the cardiac event.

Conclusion: The patients seemed to think more individualistic about their recovery compared to the spouses. The beliefs are true to the patients and spouses and should be considered, met and discussed in primary health care, responsible for the care. By adopting a family perspective and by starting in their own beliefs the patients and spouses may be more adequately educated.

Arrhythmias, heart rhythm disorders and treatment

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Assessing disease-specific patient reported outcomes within the Swedish National Quality Register AURICULA

U Walfridsson,¹ M Rosenqvist,² PL Agren,³ P Andersson,⁴ T Julhin,⁵ C Nilsson,⁶ C Christersson⁷ and P Svensson⁶

¹Dept. of Cardiology, University Hospital and Faculty of Health Sciences, Linköping University Sweden, Linköping, Sweden ²Karolinska Institute, Dept. of Cardiology, Danderyds Hospital, Stockholm, Sweden ³Falun Hospital, Dept. of Cardiology, Falun, Sweden ⁴Hudiksvalls Hospital, Dept. of Internal Medicine, Hudiksvall, Sweden ⁵University of Lund, Dept. of Arrhythmology, Skåne University Hospital, Malmö, Sweden ⁶University of Lund, Dept. of Coagulation Disorders, Skåne University Hospital, Malmö, Sweden ⁷Uppsala University, Dept. of Medical Sciences, Cardiology, Uppsala, Sweden

Aim: To evaluate the usability of the Arrhythmia-Specific questionnaire in Tachycardia and Arrhythmia, ASTA, within the Swedish National Quality Register for patients with atrial fibrillation, AURICULA, to assess the influence of atrial fibrillation on patients' daily life.

Method: During 2013, patients with atrial fibrillation (AF) were included in the pilot project. Patient-reported outcomes (PROs) were evaluated with the ASTA questionnaire before and three months after DC-conversion. The ASTA questionnaire assesses descriptive data, symptom burden including a 9-item symptom scale and Health-Related Quality of Life (HRQOL) with a 13-item scale.

Results: There were 188 patients included, 66% were men, mean age 69 years.

The most common symptoms were; Breathlessness during activity 161 patients (86 %), tiredness 152 (81 %), weakness/fatigue 145 (77 %), pressure/discomfort in chest 103 (55 %) and worry/anxiety by 90 patients (48 %). Near syncope was experienced by 36 patients (19 %) and syncope 12 (6 %).

The negative influence on HRQOL was most pronounced physically with reduced physical ability 155 (82 %), deteriorated life situation 144 (77 %), inability to carry out daily

activities 136 (72 %) and to avoid planning things they would like to do, 118 patients (63 %). Sleep problems were reported by 104 patients (55 %), feeling low-spirited or sad 96 (51 %) and 86 patients (46 %) felt worried that their symptoms would re-occur during arrhythmia free periods. At follow-up 114 patients filled out the ASTA questionnaire, where 44 reported they were freedom from arrhythmia.

Conclusions: The assessment with the ASTA questionnaire gave valuable information about symptom burden and the effects on HRQOL, due to AF. Repeated assessments could be encouraged by using the PROs as a basis for discussions at planned clinical visits. Patients could evaluate their own data and compare to data from the quality register. Logistic concerns are important to take in consideration to stimulate the assessments, both for patients and healthcare professionals. The ASTA questionnaire can be useful both in clinical care and for the quality register AURICULA

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Improved care for patients with atrial fibrillation undergoing radiofrequency ablation: pilot testing of a new clinical pathway

LF Moeller,¹ EL Grove,¹ SA Saaby,¹ KF Holm,² M Clausen,¹ C Gerdes¹ and I Schjodt¹

¹Aarhus University Hospital, Department of Cardiology, Aarhus, Denmark

²Aalborg University Hospital, Department of Cardiology, Aalborg, Denmark

Background: We developed a clinical pathway to improve information and anticoagulant treatment in patients with atrial fibrillation (AF) scheduled for in-hospital radiofrequency ablation (RFA); this pathway included an outpatient pre-examination one month prior to RFA.

Purpose: To evaluate the clinical pathway from an outpatient pre-examination to discharge after RFA from a patient, health professional and organisational perspective.

Methods: Thirty-nine patients were included from November 2013 to March 2014. Two doctors and two nurses were responsible for the outpatient examinations, including interdisciplinary information in groups of five patients and their relatives, individual conversations with a doctor and a nurse and a cardiac computed tomography scan. A quantitative and qualitative approach was used. Data was obtained from patient records, telephone interviews with 25 patients after discharge and formal discussions in the interdisciplinary team. Descriptive statistics and hermeneutic analysis was performed.

Results: Of the 39 patients undergoing outpatient examination, 35 patients underwent RFA. In four cases, RFA was cancelled after information and dialogue about the treatment due to patient concerns, lack of indication or comorbidities. Expectations were clarified and adjusted. Patient satisfaction was generally high. Several patients expressed that they felt very well prepared for RFA. No

RFA procedures were cancelled on admission day due to inappropriate INR value, but one patient was treated with vitamin K before RFA. One procedure was cancelled before hospitalisation due to inappropriate INR values. A total of 10 patients were treated with low molecular weight heparin (LMWH) after RFA. Data on INR values and LMWH therapy revealed a lack of consensus about low molecular weight heparin treatment after RFA. Establishment of an interdisciplinary team of dedicated expert doctors and nurses was considered crucial for the feasibility of the outpatient pre-examinations.

Conclusion: The pilot test showed that the new clinical pathway is feasible and efficient in clinical practice from a patient, health professional and organisational perspective. Furthermore, the pilot test disclosed areas with need for improvement and areas with potential for further development. The outpatient examination prior to hospitalisation paved the ground for a successful pathway and could usefully be incorporated in other clinical pathways.

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Interdisciplinary expert outpatient clinic for patients with atrial fibrillation (AF-clinic)

LT Thyroee¹

¹Odense University Hospital, Department of Cardiological Medicine, Odense, Denmark

Introduction: Studies indicates that patients with atrial fibrillation have a lower QoL compared to patients with other heart diseases. They meet some kind of neglect from the health society and some delay in treatment and care initiation. The interdisciplinary AF-outpatient clinic at a university hospital in Denmark, was established marts 2012, and has in order to qualify patient treatment and care. The aim of the current project is to evaluate the clinic.

The research questions are:

How do patient and relatives experience consultations in AF-clinic? (Phase I)

How do QoL develop over time? (Phase II)

What economic consequences can be derived from the AF-clinic? (Phase III)

Methods: The first research question (Phase I) includes 15 patients, and will be answered by fieldwork and interviews. Afterwards, Phase II will include 300 patients who reply the same questionnaire three times over a period of one year. Phase III will be answered through register-based research.

Preliminary results: This abstract describe only preliminary results from Phase I. It indicates that the patients seemed to know almost nothing about their disease and what was going to happen at the first consultation with the physician. The information at the first consultation was

overwhelmingly, and thereby difficult for the patients to be involved in decision-making and to remember afterwards. Several of the patients expressed fear of dying but they did not talk about it during the consultations. In the following consultations with nurses, there was more focus on living with and consequences of AF. None of the patients knows that the following consultations were by nurses.

Preliminary conclusion: The preliminary results was similar to findings from other international studies. The results indicated the importance of more precise patient information about and introduction to the outpatient consultations. Furthermore, disease and treatment information needed to be qualified and involving patient perspectives focusing on how they experienced and handled their situation. Moreover, that and why the consultations was by a physician the first time and by a nurse afterwards.

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A case of untreated atrial fibrillation and aortoiliac occlusive disease as complication

P Zafirovska,¹ I Milev,¹ S Idrizi,¹ Z Zimbakov,¹ V Ampova,¹ B Bozinovska,¹ Z Atanasov,¹ L Veljanoska,¹ T Angjuseva¹ and Z Mitrev¹

¹Special Hospital for Surgical Diseases Filip II, Cardiology and cardiosurgery, Skopje, Macedonia, The Former Yugoslav Republic of

Atrial fibrillation is a leading preventable cause of recurrent stroke for which early detection and treatment are critical. Paroxysmal atrial fibrillation is often asymptomatic and still, unfortunately mistreated in terms of thromboembolism prevention (only 42% of patients with CHA₂DS₂-VASc >3 are on Warfarin).

Here we present a case of undertreated atrial fibrillation and consequent thromboembolism occluding the inferior aorta. A 78-year old male presented with sudden pain and loss of sensibility in the lower limbs while doing gardening work. His medical history included hypertension, previous CVI and atrial fibrillation for what he was receiving only antihypertensive medications. Examination revealed cold lower limbs with loss of pulsation to the peripheral arteries. Doppler scan showed absent flow in both a. tibialis posterior and a. dorsalis pedis on both legs.

Further, echocardiographic examination showed left atrial enlargement with attached movable thrombus under the posterior mitral cusp. Computer tomography scan confirmed the presence of the thrombus (image 1) and revealed occlusion of the abdominal aorta just before the bifurcation (image 2). Laboratory analysis was within normal limits except for CK-NAC that was greatly increased to 5433U/l.

Patient was urgently transferred to the operating room where aorto-bifemoral bypass with Y Allograft 14/7mm was performed (image 3).

Postoperatively patient was placed on anticoagulant and antithrombotic therapy. Continuous follow up showed regression of the LA thrombus with its complete disappearance after five months.



Image 2. Aortoiliac occlusion.

Acute cardiac care, ischaemic heart disease and revascularisation

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Risk factors associated with early symptoms of acute coronary syndrome related-age

H Asgar Pour,¹ R Norouzzade,² MR Heidari,² S Ogut³ and M Ulus¹

¹Adnan Menderes university- Aydin Health School- Surgical Nursing Department, Aydin, Turkey ²Shahed University, Tehran, Iran (Islamic Republic of) ³Adnan Menderes university- Aydin Health School- Nutrition Department, Aydin, Turkey

Background: ACS encompasses a spectrum of coronary artery diseases, including unstable angina, ST-elevation myocardial infarction and non-ST elevation myocardial infarction with initial presentation and early management⁸. Diagnosis of ACS in older patients is difficult and it is related on natural and pathological changes associated with elderly. The aim of this study was determine risk factors associated with early symptoms of acute coronary syndrome related-age.

Methods: This observational analytic study was performed on 446 patients who admitted at the coronary care units of eight affiliated teaching hospitals. The authors categorized all extracted symptoms to typical and atypical symptoms based on Milner Classification and early symptoms of patients with acute coronary syndrome were assessed. To determine risk factors related to early symptoms of acute coronary syndrome multivariate logistic regression analyses were used.

Results: Older and younger patients had a statistically significant difference in chest symptoms, arm pain, jaw/neck pain and dyspnea ($P < 0.05$). Multivariate logistic regression showed that older patients with a history of hypertension (OR 0.43, 95% CI 0.25-0.73, $P = 0.002$), smoking (OR 0.51, 95% CI 0.30-0.89, $P = 0.019$), and obesity

(OR 0.69, 95% CI 0.51-0.10, $P = 0.011$) have less chance to experience the early symptoms compared to younger patients, respectively. Also, female older patients (OR 0.46, 95% CI 0.26-0.82, $P = 0.008$) have less probability to present early symptoms compared to younger female patients.

Conclusion: Identifying the early symptoms of ACS is important for successful and immediate treatment. It seems early symptoms of acute coronary syndrome is affected by risk factors. Obesity, hypertension and smoking were risk factors which reduce the initial symptoms of acute coronary syndrome in the elderly. Nurses and physicians should be careful in history taking of older patients suspected to acute coronary syndrome.

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A systematic review to enquire is Advanced Nurse Practitioner care more effective for the cardiac surgery patient, compared to standard care

L Doyle¹

¹Trinity College Dublin, Specialist Nursing, Cardiovascular Care, Dublin, Ireland

Purpose: This systematic review was performed to answer the question; is Advanced Nurse Practitioner (ANP) care more effective for the cardiac surgery patient, compared to standard care? The objectives were firstly, to compare care delivered by the ANP to physicians or other models of care and secondly, to evaluate are there any added benefits to having an ANP in the cardiac surgery setting.

Methods: A comprehensive search was performed and based on this, studies were methodically selected. Quality appraisal was conducted using the Cochrane Collaboration Risk of Bias Tool. Data were extracted using the modified Cochrane pregnancy and childbirth form, then synthesised using Cochrane Revman software.

Results: After an extensive and thorough search, three randomised controlled trials (RCTs) that met the inclusion criteria were found for the review. The three Canadian studies were by Goldie et al. (2012), Sawatzky et al. (2013) and Tranmer & Parry (2004). Of these, two had a high Risk of Bias and one had a low Risk of Bias. The findings of this review show within areas that are grounded in nursing such as education, preparedness for intervention/discharge and perception of being well cared for, there were statistically significant differences favouring the ANP. When comparing ANP capabilities to physicians, looking at post-operative complications, the care provided by ANPs was equal to that of the physician. There was no statistical difference in Health Related Quality of Life, physical or mental component between ANP care and standard care. There was no statistically significant difference in participants' symptoms at one to two weeks post-operatively or five to six weeks post-operatively. There was also no statistically

significant difference in hospital readmission or length of stay in hospital between ANP care and standard care.

Conclusions: The ANP role has evolved to incorporate the therapeutic model of medicine with the caring model of nursing. Evidence is emerging of the effectiveness of the ANP care for the cardiac surgery patient, but there is an ongoing need for it to be fully established. The endeavour remains, to perform rigorous research including more good quality RCTs to offer evidence of this effectiveness. From this systematic review the results are positive. There are added benefits to having an ANP in the cardiac surgery and the care delivered by the ANP is equivalent or better compared to standard care. Therefore this systematic review concludes that ANP care is effective for the cardiac surgery patient compared to standard care.

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Independent risk factors for death and major events after immediate and medium-term follow-up in primary percutaneous coronary intervention. The gender influence.

I P Borges,¹ ECS Peixoto,² RTS Peixoto,² RTS Peixoto³ and VF Marcolla¹

¹Rio de Janeiro State Government, Rio de Janeiro, Brazil ²Fluminense Federal University, Rio de Janeiro, Brazil ³Aloysio de Castro State Institute of Cardiology, Rio de Janeiro, Brazil

Background: Coronary heart disease is the leading cause of mortality and morbidity. A higher mortality risk for women with acute ST-elevation myocardial infarction has been a common finding in the past, even after acute percutaneous transluminal coronary angioplasty (PTCA). Prior studies have reported worse results after PTCA in women than in men. However, recent data suggest that this difference is less marked.

Objective: To determine gender-related differences and risk factors for death and major events, both in-hospital and at six-month follow-up, of patients that have been admitted within the first twelve hours of ST-segment elevation acute myocardial infarction (AMI) and primary PTCA in order to set out whether there are gender differences in a real-world contemporary treatment and outcome.

Methods: For two consecutive years, 199 consecutive patients were enrolled in the study, with ST-segment elevation AMI and primary PTCA without cardiogenic shock. The immediate outcome, in-hospital and six-month follow-up were studied. Multivariate Cox analysis were performed to identify independent predictors of death and major events.

Results: Clinical characteristics were similar in both groups, except that women were older than men (67.04 +/- 11.53 x 59.70 +/- 10.88, $p < 0.0001$). In-hospital mortality was higher among women (9.1% x 1.5%, $p = 0.0171$),

as was the incidence of major events (12.1% x 3.0%, $p = 0.0026$). The difference in mortality rates remained the same at six months (12.1% x 1.5%, $p = 0.0026$). The independent predictors of death in multivariate analysis: were: female gender and age >80 years old. Independent predictors of major events and/or angina were: multivessel disease and severe ventricular dysfunction.

Conclusion: After ST-segment elevation AMI and primary PTCA, the independent predictors of mortality throughout the follow-up were female gender and age >80 years, in both in-hospital and six months follow-up.

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SCAMP for non-invasive ventilation implementation by nurses in acute cardiogenic pulmonary edema

P Christofi,¹ E Lambrinou,² L Palazis,³ N Middleton,² P Avraamides⁴ and E Papathansoglou²

¹Limassol General Hospital, Coronary Care Unit, Limassol, Cyprus ²Nursing Department, Cyprus University of Technology, Limassol, Cyprus ³Limassol General Hospital, Intensive Care Unit, Limassol, Cyprus ⁴Limassol General Hospital, Cardiology Department, Limassol, Cyprus

Background: Non-Invasive Ventilation (NIV) is an important therapeutic tool in Acute Cardiogenic Pulmonary Edema (ACPE), whereas nursing knowledge adequacy is associated with successful implement Standardized Clinical Assessment & Management Plans (SCAMPs) are care pathways designed for standardization of care of heterogeneous patient population, such as of ACPE, for quality of care improvement and resource utilization reduction.

Purpose: The development of an evidence based nurse led SCAMP protocol for NIV implementation in ACPE.

Methods: Literature review, consensus of the research team, entry and exclusion criteria, clinical improvement or not, NIV outcomes and failure criteria were established. The protocol/algorithm consists of actions concerning initial patient assessment, ventilator checks, implementation, monitoring, parameters' titration, corrective measures and NIV release. The targeted data collection elaborated in two ICUs in Cyprus, where trained nurses initiated and run NIV, according to the protocol/algorithm, under intensivists' supervision. The researchers-observers were recording process, without interfere in treatment decisions and deviations. ACPE patients were recruited ($n = 20$), in two pilot applications ($n = 10$). Each application was followed by data processing and modification of the protocol/algorithm, based on deviation, observations and literature review.

Results: The participants were presented with dyspnea, tachypnea, hypoxemia, acidosis, generalized crackles in all lung fields, and imaging documentation of ACPE. Non-Invasive Spontaneous Mode, PS 6-20cmH₂O, PEEP

5-7cm H₂O and FiO₂ 0,4-1,0 were implemented. Twelve patients were released of NIV in four hours, with a mean duration of 7.43±5.6hours. In four hours' recordings, improvement was shown in the rest study variables, compared with baseline, such as hypoxemia (PO₂/FiO₂:296±92.9mmHg, F29.89 $p < 0.0001$), acidosis (pH:7.4±0.05, F14.8 $p = 0.029$), RR (19.3±3.7/1', F7.513 $p < 0.0001$), heart rate (HR) (81.8±20.1, F92.3 $p < 0.049$), blood pressure, systolic (SBP:119,5±11.3mmHg, F8.662 $p = 0.01$) and diastolic (DBP:67±9,8mmHg, F7.253 $p = 0.131$), and recovery in level of consciousness (100%). The mean ICU length of stay (37.9±24.9 hours) was shorter in patients without concomitant diseases (35%) (22.7±13.9 ώρες, $p = 0.042$). Lack of NIV tolerance (10%) and vomiting (5%) were managed by removing NIV.

Conclusions: The present protocol/algorithm is demonstrated to be safe and feasible

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Comparison of treatment course of two aortic valve stenosis and ischemic heart disease patients undergoing more and less invasive approach.

MK Kralj,¹ SP Podlesnik¹ and KP Peternej²

¹University Medical Centre Ljubljana, Department of Cardiology, Ljubljana, Slovenia ²University Medical Centre of Ljubljana, Department of Cardiovascular Surgery, Ljubljana, Slovenia

Introduction: The course of recovery of two patients with different treatment approaches to aortic valve stenosis and ischemic heart disease were compared. Both patients had aortic valve stenosis and ischemic heart disease; both were discussed at cardio surgical counsel and were suggested different treatment approaches. First patient had percutaneous coronary intervention with two coronary artery stents implanted and during same procedure he had also transfemoral aortic valve implantation (TAVI). Second patient was undergoing conventional surgical aortic valve replacement (AVR) and one coronary artery bypass graft (CABG) during single procedure.

Methods: Differences in anaesthesia categories, post-operative levels of care, access sites, length of stay and course of recovery process overall after each approach were compared.

Results: First patient had monitored anaesthesia, procedure was performed via femoral access sites and he had several vascular accesses. After procedure the patient was admitted to a level two care facility for 1 day, following with 4 days on level one care facility before he was discharged home. Two months after procedure the patient is very physically active. The surgical patient had general anaesthesia, needed level three care facility for two days, continuing with three days of level two care facility. CT

scan needed to be performed to exclude ischemic cerebral vascular disease because some neurological deficit was detected. Before discharge he was for another five days in level one care facility. He had sternotomy, chest drain exit site and leg wound from harvesting saphenous vein. Also he had several different vascular accesses for the purpose of monitoring and intravenous drugs. Length of stay was 10 days.

Discussion: Mostly patients with a higher surgical risk are suggested to undergo less invasive TAVI and coronary artery stenting. Their recovery is with the absence of complications faster comparing to conventional AVR and CABG.

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Antecubital approach in right heart catheterization; feasibility and rate succes

M A Martinez Gomez¹ and V A Garcia Mosquera¹

¹Hospital de Meixoeiro, Vigo, Spain

Background: Right heart catheterization (RHC) is an invasive procedure performed to study right heart pressures and pulmonary tree by hemodynamic and angiographic evidence.

RHC has traditionally been performed using proximal venous access (PVA) sites such as the common femoral, internal jugular or subclavian veins. However, the use of antecubital veins for RHC is feasible and entails less risk of vascular complications than the other vascular access.

Purpose: Compare the safety and efficacy of right heart catheterization using these two approaches.

Methods: From February 2006 to December 2013, we included 229 consecutive patients requiring hemodynamic right heart assessment. Exclusion criteria were the presence of arteriovenous fistulae in the arm, inability to access the antecubital vein and the operator's decision to perform the procedure through the femoral vein.

Results: Mean age of the population was 69 ± 12 years, 54% were male, 61% had hypertension, 8% active smokers, 5% had chronic lung disease and 12% were obese. Antecubital vein approach was achieved in 172 patients (78%), being the most frequent reason for crossover to the femoral vein, the inability to access the antecubital vein. Mean time to access the vein was 2.7 ± 1.6 minutes for the antecubital and 8.3 ± 4.5 min for the femoral ($p < 0.005$). Length of right heart study was 11.3 ± 5.3 minutes for the antecubital vein vs. 24 ± 15.2 min in the femoral vein ($p < 0.005$). There was no difference in the incidence of complications between the antecubital or femoral venous access, respectively (5.6% vs. 3.7%; $p = 0.584$), being the most frequent superficial haematomas.

Conclusions: The use of the antecubital vein for performing right cardiac catheterizations is feasible in selected

patients with adequate venous access, reducing procedure time and with similar rates of success and complications.

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From powerlessness to striving for control - experiences of invasive treatment while awake

J Wermstrom,¹ E Ryrlen¹ and Å Axelsson¹

¹University of Gothenburg, Department of Cardiology, Gothenburg, Sweden

Purpose: Patients with acute heart failure treated in cardiac intensive care are awake during invasive monitoring and treatment and are forced to remain in strict bedrest, sometimes for several days.

The purpose was to describe patients' experiences of being cared for during invasive monitoring and treatment while awake, with the emphasis on empowerment.

Method: A qualitative approach with face-to face interviews was used to explore the patients' experiences. Ten adult patients who had undergone or were undergoing invasive monitoring and treatment for at least 24 hours were included in the study. Eight patients were interviewed during invasive treatment and two patients six months after discharge. Data was collected using an interview guide with three main questions: "Can you please tell us how you experience the strict bedrest this treatment requires? What is important to you during this treatment? How do you experience your ability to influence your situation?" Data was analysed according to qualitative content analysis.

Results: Three of the ten participants were women; median age was 77 years (range 67 to 90 years). The duration of the invasive treatment was one to six days (median 2.5 days). A main theme emerged in which the patients described a "sense of powerlessness and striving to regain control", described in the two themes: "Exposed" and "Endurance". When participants became seriously ill they lost control over their situation. They were exposed to the treatment and care of the health-care staff. Due to the severity of the illness they surrender to the hospital care and had in the acute phase no desire to influence the treatment. The patients described a feeling of trust towards the health-care staff that made it easier to surrender. However, when the patients' condition improved, they wanted to take part in decisions relating to daily routines. To endure the situation, the patients needed to have hope and a sense of participation, which gave them control.

Conclusion: This study shows that the patients' illness forced them to surrender to the staffs' knowledge and treatment, and the patients had faith that the treatment they received was necessary for survival. As the patients became more aware it was important that the health-care staff didn't take over decisions and functions, the patients could manage themselves. This helped the patients' endure the time during invasive monitoring and treatment.

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Case of coronary fistulae in 6-year old girl: transcatheter closure

I Milev,¹ J Januska,² S Idrizi,¹ Z Zimbakov,¹ V Ampova,¹ P Zafirovska,¹ T Angjuseva¹ and Z Mitrev¹

¹Special Hospital for Surgical Diseases Filip II, Cardiology and cardiosurgery, Skopje, Macedonia, The Former Yugoslav Republic of ²University Hospital Ostrava, Ostrava, Czech Republic

Coronary artery fistulae are rare congenital or acquired anomalies that usually communicate the coronary circulation with other vascular structures or heart chambers. When they are symptomatic, endovascular closure is a method of choice and proven efficient and relatively safe method of treatment.

We report on a 6-year old girl patient presenting with cardiac murmur and fatigue. Echocardiographic examination revealed dilated left main coronary artery (LMCA). Coronarography was performed revealing abnormally dilated left main ostium with normal coronary anatomy and abnormal fistula forming aneurism (23mm) and distal ending in to the coronary venous sinus (image 1). Using an AL2 guiding catheter the fistula was canulated and through it an Amplatzer vascular plug II (10 x 7mm) was placed (image 2). There was a post interventional reduction of antegrade flow through the fistula with normal drainage of coronary veins in the coronary sinus.

Six months later, the control angiography showed no signs of persisting flow through the fistula with normal flow through the left main artery (image 3).

Three years later, the patient is asymptomatic and doing well.

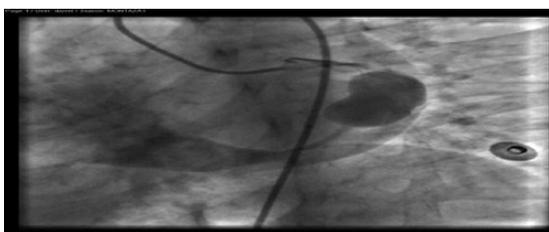


Image 1. Coronary fistula.

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Prognostic value of myocardial perfusion imaging in patients with non-stenotic coronary lesions

A Kisko¹ and M Vereb²

¹University in Presov, Faculty of Health Care, Presov, Slovak Republic
²Klinikum Kassel, Nuclear medicine, Kassel, Germany

Background: Coronary angiography has diagnostic limitation in identifying non-stenotic coronary lesion (NSCL) responsible for ischemia. Although an abnormal fractional

flow reserve (FFR) increases the probability of significant obstructive lesions, it cannot reliably distinguish intermediate epicardial stenosis from ischemic, diffuse atherosclerosis or microvascular disease. Myocardial perfusion defects in patients (pts) with NSCL have often been unreasonably considered by invasive cardiologists as being “false positive”.

Methods: We evaluated a prognostic value of gated SPECT MPI in unselected group of the pts with NSCL over a 24 month period of follow-up.

170 pts (115 males, 67.6%; age 42-68 years; mean age 56.4±9.2 years) with NSCL (stenosis of 50% or less of LAD and 70% or less of any other coronary artery or its major branches, FFR cut-off 0.80) were enrolled into the study. Retrospective analysis of 86 pts with NSCL and subsequent positive MPS performed within 6 months from the time of coronary angiography (study group) and 84 pts with normal scan results (control group) was performed. Follow-up period was for 24 months from the time of MPI or up to the time of major coronary event (MCE) - first occurrence of cardiac death, acute coronary syndrome or myocardial infarction.

Results: Over a two-year follow-up, approximately 11% of the pts in study group had MCE as compared to 3.2% in the control group ($P < .01$). Abnormal MPI, EF < 35% and high levels of hs-CRP were independent predictors for MCE in the study group. In multivariate analysis only an abnormal MPI remained to be an independent predictor regardless of size or severity of perfusion abnormalities ($P < .005$). Pts with NSCL on coronary angiography and myocardial perfusion defects have relatively high event rate (11%) of MCE over a period of 24 months from the time of MPI.

Conclusion: We highly recommend gated SPECT MPI to be performed in cases of NSCL to look for possible ischemia and to avoid life-threatening coronary complications in forthcoming future. It can also prevent from unnecessary repeatedly performed coronary invasive procedures for identifying lesion responsible for angina in NSCL.

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The incidence of acute kidney injury after coronary angiography in patients with and without diabetes

KE Kevric,¹ ME Mujicic,¹ KM Kulic,¹ SM Spuzic,¹ HD Hrustemovic¹ and NK Kukavica¹

¹University of Sarajevo, Center for heart, Sarajevo, Bosnia and Herzegovina

Background: The acute renal impairment after contrast procedure or contrast-induced nephropathy (CIN- contrast-induced nephropathy) is defined as the impairment of renal function and is measured as increase in serum creatinine 0.5 mg/dL (44 μmol/L) or increase 25% to 50% from baseline within 48-72 hours after of intravenous contrast

administration in the absence of other identifiable causes of impairment renal function. It is responsible for acute kidney dysfunction in 11 to 14,5% cases.

The aim of this study was to determine risk group of patients and factors as prophylaxis of contrast-inducible nephropathy (CIN) after coronarography in patients from heart of centre in university hospital.

Methods: The study was conducted as a retrospective, clinical controlled study. In this study was included 200 patients. All patients was divided in two groups. First group 100 patients without diabetes and second group 100 patients with diabetes. The duration period of this study it was one year. All patients had performed a interventional cardiology procedure – coronarography. All of these patients was perform some of clinical exam. These examination included tests of blood serum creatinine and urea before and after coronarography, 24 and 48 hours. Also, volume of contrast agent have been analysed.

Results: In examined group (diabetic patients) 16/100 (16%) patients developed acute renal impairment compatible with contrast-induced nephropathy versus 11/100 (11%) in control group (non diabetic patients).

Conclusion: Risk factors for developing contrast induced nephropathy for this patients are diabetes mellitus, old age, high volume of contrast agent, preexisting chronic kidney disease and congestive heart failure.

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Factors affecting the occurrence of out-of-hospital cardiac arrest

I Uchmanowicz,¹ W Bartkiewicz,² J Sowizdraniuk¹ and J Rosinczuk¹

¹Health Science Faculty Wroclaw Medical Univeristy, Wroclaw, Poland

²Emergency Medical Service Station , Wroclaw, Poland

Objective: This paper aims to discover the risk factors for sudden cardiac arrest (out of hospital sudden cardiac arrest - OHSCA) which significantly affect the decision about prioritizing emergency interventions before dispatching medical emergency teams, risk of deterioration of the patient's condition at the scene and emergency procedures.

Methods: A retrospective study taking into account the international classification of diseases ICD-10 based on an analysis of medical records of an emergency medical service.

Results: The main risk factor of OHSCA is coexistence of external cause leading to illness or death (ICD Group V-10) as well as the occurrence of diseases from the group of endocrine disorders (group E), in particular diabetes. The increase in the risk of OHSCA incidence is affected

by nervous system diseases (group G), especially epilepsy of various etiologies, respiratory diseases (group J), mainly COPD and bronchial asthma or mental and behavioral disorders (group F), with particular emphasis on the drugs issue. The procedure for receiving calls for emergency notification centre does not take into account clinical risk factors for sudden cardiac arrest (SCA).

Conclusion: Having knowledge of OHSCA risk factors can increase the efficiency of rescue operations from rapid assessment and provision of appropriate medical team, through effective performance of medical emergency treatment and prevention of SCA or finally reducing the costs.

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Mean platelet volume and prognosis of unstable angina

T M Abdelrahman¹

¹Minia University Hospital, Minia, Egypt

Objective: Clopidogrel therapy is the standard of care in patients with acute coronary syndrome (ACS). However, a percentage of subjects are nonresponders to clopidogrel and this leads to increased adverse outcome. On other way round, some responsive patients exposed to bleeding complications. Detection of both in daily practice is important in order to tailor the treatment protocol. In this study we aimed to estimate the cutoff value of mean platelet volume (MPV) for both platelet responsiveness and bleeding risks.

Methods: Exclusion criteria were: severe anemia, thrombocytopenia, myelodysplastic syndrome, coagulopathy and recent blood transfusion. In all patients clopidogrel was initially started and maintained during the hospital stay. Grouping was then done at the pre-discharge day based on their outcome into group (I) who had improved and were 175 patients termed as, clopidogrel responders and, a group (II) were 55 patient who were nonresponders and needs thrombolytic therapy or coronary intervention. Clinical manifestations are reported. Major complications as bleeding or, urgent need for percutaneous coronary intervention (PCI) are also studied.

Results: Among the 230 patients analyzed, 55 were found to be clopidogrel nonresponders (24%). Mean MPV was found to be significantly higher in nonresponders compared to responders (11.7 ± 1.2 fL vs. 8.4 ± 1.5 fL, $p < 0.001$). A cut-off value of 9.7 fL for MPV was detected in prediction of clopidogrel nonresponsiveness with a sensitivity of 78.2% and specificity of 66.8% and a cutoff value for bleeding tendency is a MPV lower than 6.3 fL with a sensitivity of 71.4% and specificity of 62.5%

Results of Clinical findings of both groups is defined in table (3):			
Clinical Findings	Group-I (N=175)	Group-II (N=55)	P value
Persistence of chest pain (n,%)	31 (18%)	48 (88%)	0.001
New onset MR (n,%)	7 (4%)	29 (54%)	0.001
Manifestation of HF (n,%)	4 (2.3%)	24 (44%)	0.001
ST-segment elevation (n,%)	0.0 (0%)	43 (78%)	0.001
Acute myocardial infarction (n,%)	0.0 (0%)	26 (47%)	0.001
Arrhythmias (n,%)	4 (2.3%)	15 (28%)	0.001

Results of clinical findings.

Psychosocial, patient perspective

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Incidence and impact of delirium on physical and cognitive function in octogenarian patients one and six months after Transcatheter Aortic Valve Implantation or Surgical Aortic Valve Replacement

LSP Eide,¹ AH Ranhoff,² B Fridlund,³ R Haaverstad,⁴ KO Hufthammer,⁵ KJ Kuiper,⁴ JE Nordrehaug⁶ and TM Norekvaal⁴

¹University of Bergen, Department of Clinical Science, Bergen, Norway

²Haralds plass Diakonale Hospital, Kavli Research Center for Geriatrics and Dementia, Bergen, Norway ³Jönköping University, Jönköping, Sweden

⁴Haukeland University Hospital, Department of Heart Disease, Bergen, Norway

⁵Haukeland University Hospital, Centre for Clinical Research, Bergen, Norway

⁶Stavanger University Hospital, Department of Cardiology, Stavanger, Norway

Purpose: To identify the incidence of postoperative delirium (PD) and determine its impact on activities of daily living (ADL), instrumental activities of daily living (IADL) and cognitive function in octogenarian patients one and six months after Transcatheter Aortic Valve Implantation (TAVI) or Surgical Aortic Valve Replacement (SAVR).

Methods: This was a prospective cohort study of consecutive octogenarian patients with severe aortic stenosis (AS) undergoing elective TAVI or SAVR in a tertiary university hospital. Inclusion criteria: age 80+ and previous acceptance for TAVI or SAVR. Exclusion criteria: inability to speak Norwegian or denied consent to join the study. PD was measured for five postoperative days with the Confusion Assessment Method (CAM). Barthel Index and Nottingham Extended Activities of Daily Living Scale were used to assess ADL and IADL one day before, and one and six months after treatment. Cognitive function was established with the Mini Mental State Examination (MMSE) at baseline and at six months follow-up. The impact of PD on dependent variables was determined with logistic regression analysis.

Results: Between 2011 and 2013, 143 patients, with a mean age of 83.5 years (SD 2.7) were included. TAVI was

performed on 46% of the patients. TAVI patients were older ($p \leq 0.001$), had lower baseline MMSE scores ($p = 0.007$), more comorbidities ($p \leq 0.001$) and higher Logistic EuroScore ($p \leq 0.001$) than patients undergoing SAVR. Significantly fewer ($p = 0.013$) patients treated with TAVI (44%) experienced PD compared to patients treated with SAVR (66%). Multiple regression analysis showed that PD was associated with ADL ($p = 0.001$) and IADL ($p < 0.001$) one month after treatment, but not after six months. Cognitive function six months after treatment did not show any strong association with PD ($p = 0.088$).

Conclusion: The incidence of PD was higher in octogenarian patients undergoing SAVR compared to TAVI. PD is an important predictor of ADL and IADL function one month after aortic valve replacement, but has little predictive value for ADL, IADL and cognitive function after six months.

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A RCT of the effectiveness of an intervention to enhance pain management after discharge from cardiac surgery

A K Bjornnes,¹ I Lie,² T Rustoen,¹ A Stubhaug³ and M Leegaard⁴

¹Oslo University Hospital, Department of Research and Development, Division of Emergencies and Critical Care, Oslo, Norway ²Oslo University Hospital, Department of Cardiothoracic Surgery, Oslo, Norway ³Oslo University Hospital, Department of Pain Management and Research, Oslo, Norway ⁴Oslo and Akershus University College, Institute of Nursing, Oslo, Norway

Purpose: Relevant discharge information about pain relief and use of analgesic medication may help reduce postoperative pain and prevent persistent pain after cardiac surgery.

The purpose of this study was to assess the effectiveness of an educational discharge intervention compared to usual care on pain characteristics after cardiac surgery. Participants description of barriers to pain management prior surgery will also be described.

Methods: Patients undergoing elective coronary artery bypass grafting and/or valve surgery were consecutively enrolled in this randomized controlled trial. Participants randomized to the intervention group (n = 208) received an educational booklet at discharge from hospital and the control group received usual care (n = 208). The primary outcome was the Brief Pain Inventory- Short Form, and barriers to pain management were assessed at baseline by using the Barriers to Management of Pain- Short Form questionnaire, and data were collected at two weeks, one, three, six and 12 months after surgery. General linear mixed models were used to determine between group differences over time. The study conforms with principles as outlined in the Declaration of Helsinki and was approved by the institutional clinical research panel and the Regional Committee for Medical Research Ethics, Health Region South-East, Norway.

Results: Exclusion included 67 (16 %) out of 416 participating patients mainly due to complications related to surgery (n = 35) and no statistically significant differences between control and intervention groups were demonstrated at baseline in outcome variable data. No statistically significant differences between the groups were observed in the outcome measures following surgery. In total sample, two weeks after surgery 84 % reported pain at rest and 40 % stated their worst pain to be moderate/severe. Despite the pain decreased significantly over time, still 28 % reported pain at rest at 12 months and 8 % reported moderate/severe worst pain.

Approximately half of the sample holds incorrect beliefs about pain and pain management.

Conclusion: The intervention did not result in a significant difference between control and intervention groups. Misbeliefs about pain and pain management are common among the participants. The study justify the need for educational interventions both to address the patients' misbeliefs and to enhance pain management before and after discharge from cardiac surgery. Further research is needed in finding the most potent ways to educate the patients in pain management after cardiac surgery.

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Patients' perspectives of discussing prognosis and end-of-life care

A-L Hjelmfors,¹ A Stromberg,¹ M Friedrichsen,² A Sandgren,³ J Martensson³ and T Jaarsma²

¹Linköping University, Department of Medical and Health Sciences, Linköping, Sweden ²Linköping University, Department of Social and Welfare Studies, Linköping, Sweden ³Jönköping University, School of Health Sciences, Jönköping, Sweden

Purpose: This study aims to describe heart failure patients' perspectives on communication about prognosis and end-of-life care.

Methods: A qualitative study with four focus-group interviews including patients with heart failure (n = 15, NYHA I-IV) was performed. The participants were 12 men and 3 women (Median 76 years, range 21). Data will be analysed using content analysis where patterns, anomalies and themes will be sought.

Preliminary findings: A content analysis is in progress. The preliminary findings reflect different aspects of the patients' experiences and preferences for communication about prognosis and end-of-life care. With regard to their experiences, the patients thought a lot about the impact the disease had on their bodies as well as whether they would deteriorate or get better. The majority of the patients had never discussed the disease trajectory with any health care professional. On the contrary, some patients had been told by their physician that they would not die from having heart failure. Some patients had asked their physician about their prognosis, but they were not content with the answers they had received. Others had not asked about their prognosis because they did not expect to get a reliable answer, believing that the health care professionals did not know what to answer or did not want to talk about prognosis. With regard to their preferences, the patients stated that if health care professionals want to initiate a discussion about prognosis or end-of-life care it is important that they approach the subject gently and be perceptive if the patient wants to have the conversation or not. Some patients do not want to talk about the future and might get worried or offended of the topic. However, some patients also pointed out that it is important that they themselves take responsibility, showing the health care professionals that they are interested in discussing the disease progression. Most patients would prefer to discuss this in an open and honest way, having a family member present.

Preliminary conclusions: Many of the patients had a lot of thoughts about their future but none reported to have discussed these concerns in a satisfying way with a health care professional. They described a need for professionals to be prepared and knowledgeable to discuss their concerns in an open and honest way. Our final content analysis will provide more in depth results on the topic.

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Stroke and sleep disturbances among men aged 25-64 (who monica-mopsy) Grant RHSF 14-06-00227-

VV Gafarov,¹ E A Gromova,¹ I V Gagulin,¹ D O Panov¹ and AV Gafarova¹

¹Institute of Internal Medicine, Novosibirsk, Russian Federation

Objective: We sought to examine the relationship between sleep disturbances and the risk development of stroke among men ages 25 to 64 years.

Methods: Within the framework of program, WHO MONICA-psycho-social was examined representative sample of men 25-64 years old at Octyabrsky district (1994 year). Total sample was 657 persons. Sleep disturbances were measured at baseline with the use of the MONICA - psycho-social Interview Sleep disturbances scale. Incidence of new cases of stroke was revealed at 14-year follow-up. Cox- proportional regression model was used for an estimation of hazard ratio (HR).

Results: During the 5-year follow-up the risk for stroke was higher in men, assessing sleep as "poor" or "very bad", compared to those who sleep assessed as "good" risk of stroke was 3.9 (95% CI 1.177-11.018, $p < 0.01$) times higher. During the 10-year follow-up the risk of developing cardiovascular disease was higher among men with "bad" or "poor" sleep, the risk of stroke was - 2.72 (95% CI, 1.046 -9.582, $p < 0.05$) times higher. For 14 years there has been a tendency to increase the PR stroke of 1.5 (95%CI 0.046-5.17, $p > 0.05$) in men with sleep disorders, compared with those who have pointed out the quality of sleep as "satisfactory" or " good ".The highest rate of stroke was observed in men with sleep disorders related to groups of widows and divorcees, with incomplete secondary - primary education, as well as to working heavy, medium physical work, retired.

Conclusion: The results show that in a population of men 25-64 years, the risk of stroke associated with sleep disorders. The risk of stroke is 2-4 times higher in men who evaluate sleep as "bad." Sleep disorders are more common in the groups with the initial - unfinished secondary education among the working and middle heavy physical labor.

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Self-reported health status in early cardiac rehabilitation: An evaluation study

I Drotningvik,¹ B Fridlund,² M Aarflot³ and TM Norekvaal¹

¹Haukeland University Hospital, Department of Heart Disease, Bergen, Norway ²School of Health Sciences, Jönköping University, Jönköping, Sweden ³Bergen University College, Bergen, Norway

Purpose: Patient-reported health status has become an important outcome providing information from the patient's point of view. How patients report their own health status before and after completed early cardiac rehabilitation (ECR) is sparse. The aim of this study was to describe and evaluate self-reported health status immediately after participating in an outpatient ECR with focus on age, gender and diagnostic groups.

Methods: Patients with cardiovascular disease (CVD) were referred to a nurse-coordinated ECR programme when discharged from two hospitals in south-western Norway. The ECR programme started 1-2 weeks after a hospital discharge. This five week ECR included two days

of educational sessions on lifestyle modification as well as three physical exercises weekly. The Myocardial Infarction Dimensional Assessment Scale (MIDAS) was applied on the first and last day of the programme and analyzed by a paired t-test. Sub-analyses were performed related to age, gender and diagnostic groups.

Results: Ninety-six participants were included (76% men). Eighty-three participants (87%) answered the questionnaire both at pre-/post programme. The mean age was 61 years (SD \pm 10.2), ranging from 32-84 years. Forty-seven percent had STEMI and 26 % had NSTEMI when hospitalized. Forty-one percent had hypertension and 17 % had diabetes mellitus. Sixty-three percent were ex-smokers. The physical domain of MIDAS showed significant improvement in all patients ($p < 0.05$), while no significant improvement was found in the other six domains (insecurity, emotional reaction, dependency, diet, concerns over medication and side effects). Men had greater improvement in physical activity than women ($p < 0.001$). For the domain insecurity, men improved more than women both at baseline ($p < 0.006$) and at five weeks ($p < 0.001$).The age group 32-50 years ($p < 0.008$) and 51-69 years ($p < 0.001$) improved more than the oldest age group, 70-84 years. The patients with MI ($n = 71$) and unstable angina ($n = 16$) had significant improvement in contrast to patient with stable angina ($n = 9$).

Conclusion: ECR improved self-reported health status concerning physical activity in patients with CVD. No significant improvement was found in the other six domain of MIDAS. The study showed improvement due to lower age, male gender, UAP and MI diagnostic group in physical activity. There were also differences in self-reported health status between men and women at baseline and at five weeks. The study confirms that an ECR programme helps patients to recover more quickly with regards to symptoms and physical limitations after a CVD event.

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Psychological burden among family members of patients residing in cardiac intensive care units

N F Eshah¹ and A Rayan¹

¹Zarqa University, Faculty of Nursing, Zarqa, Jordan

Background: Depression, anxiety, and stress are the most common forms of psychological burden that observed as a result of having a relative admitted to cardiac intensive care unit (CCU). Studying this problem will help nurses to refine and modify nursing care plans to meet the needs of CCU patients and their relatives and minimize the devastating impact of the psychological burden on relatives.

Objective: The study aimed to assess the prevalence of depression, anxiety and stress; and to identify factors associated with negative psychological status among relatives of patients residing in cardiac intensive care unit.

Methods: Descriptive correlation design was used, and only first-degree relatives were included through convenience sampling. The theoretical structure for the study was derived from Lazarus and Folkman's stress, appraisal, and coping theory. Psychological burdens were measured through Depression Anxiety and Stress Scale (DASS). The DASS is a 42-item questionnaire including three self-report subscales designed to measure the negative emotional states of depression, anxiety, and stress.

Results: The study included 164 first-degree relatives, and their mean age was 34.7. Spouses had the highest level of psychological burden. Interestingly, 33.6%, 48.2%, and 39% of participants had moderate to extremely severe levels of depression, anxiety, and stress respectively. There were significant relationships between psychological burdens and relatives' gender, educational level, perception of the seriousness of patients' condition, and previous experience of having relatives in CCU.

Conclusion: Having a relative in the CCU is associated with high levels of psychological burden. Family members suffered from considerable levels of depression, anxiety, and stress. Relatives' ability to live balanced psychological lives was significantly influenced, and consequently, they were not able to be good sources of support for their patients. Nurses have to play a leading role in providing psychological support to relatives of cardiac intensive care unit patients. Indeed, providing support to family members will play an important role in promoting the psychological well-being of those relatives and, consequently, effectively contribute to their patient outcomes.

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To adjust and endure: a qualitative study from older cardiac patients with multimorbidity

J Eckerblad,¹ K Theander,² A Ekdahl,³ T Jaarsma¹ and I Hellstrom¹

¹Linköping University, Department of Social and Welfare Studies, Linköping, Sweden ²Faculty of Health, Science and Technology, Department of Health Sciences, Nursing, Karlstad Uni, Karlstad, Sweden ³Vrinnevi Hospital, Geriatric Department, Norrköping, Sweden

Purpose: To explore the experience of living with a high symptom burden from a perspective of older community-dwelling people with cardiac disease and multimorbidity.

Method. A qualitative design using semi-structured interviews with 20 community-dwelling older patients diagnosed with cardiac disease and multimorbidity. Sixteen women and four men, 79-89 year old, with a mean of 12 symptoms per person were included. Data were analyzed using content analyses. The memorial symptom assessment scale was used to identify symptoms and calculate symptom burden.

Results: The experience of living with a high symptom burden revealed the overall theme, "To adjust and endure" and three sub-themes: "to feel inadequate and limited", "to feel dependent", and "to feel dejected". In the subtheme to feel inadequate and limited the participant described they no longer had the capacity to manage, control or learn new things. They felt their ability to perform tasks or activities was limited and which made them feel isolated from friends or family. The second subtheme, to feel dependent included that being dependent upon others was a new and inconvenient experience. The lack of control and the burden they put on others caused a feeling of guilt. The final subtheme, to feel dejected described that the participants did not have any strength left to handle their conditions anymore. When the burden became too high the only thing left to do was to go sit, or lie down and wait for it to pass.

Conclusion: This study highlights the importance of a holistic approach considering symptom assessment. Symptoms should be communicated with focus on the symptom experience and impact where barriers as well as resources are taken in to consideration.

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Depression symptoms and subclinical left ventricular diastolic function in healthy adults

LT Gustad,¹ O Bjerkeset,² LB Strand,³ I Janszky,³ Ø Salvesen⁴ and H Dalen⁵

¹Norwegian University of Science and Technology, Department of Neuroscience, Trondheim, Norway ²Nord-Trøndelag University College, Faculty of Health Sciences, Levanger, Norway ³Norwegian University of Science and Technology, Department of Public Health, Trondheim, Norway ⁴Norwegian University of Science and Technology, Department of cancer research and molecular medicine, Trondheim, Norway ⁵Levanger Hospital, Department of Internal Medicine, Nord-Trøndelag Hospital Trust, Levanger, Norway

Introduction: Even though depression symptoms, especially if repeated, are associated with increased risk for cardiovascular disease (CVD), little is known about their influence on subclinical left ventricular (LV) function. Thus, we aimed to assess the association of single and repeated self-report of depression on the Hospital Anxiety and Depression Scale (HADS-D) with the sensitive echocardiographic indices (peak mitral annular early diastolic velocity) of diastolic LV dysfunction.

Methods: In the 3rd Nord-Trøndelag Health Study (HUNT 3 2006-2008), 48,289 persons participated at the baseline examination. A random selection of 1266 adults which were free from known CVD, diabetes, hypertension and significant valvular disease at the HUNT 3 baseline examination were examined by echocardiography. Of these, 1034 also answered the HADS-D questionnaire at baseline. Previous self-reported depression symptoms were available for 700 persons from their participation

in HUNT2 ten years earlier (1995-1997). We used linear regression models to assess if present HADS-D score in HUNT 3 or HADS-D cumulative burden (calculated as HADS-D score HUNT 2 + HADS-D score HUNT 3) were associated with subclinical decline in LV diastolic or systolic indices.

Results: HADS-D cumulative burden was correlated with LV diastolic function, but present depression symptoms were not. Peak mitral annular early diastolic velocity was 5.5% lower for women and 5.0% lower for men per 5 units of increase in HADS-D cumulative burden, and the CIs did not include the nil. These results were robust for adjustments for age, education and traditional cardiovascular risk factors at baseline in HUNT 3.

Conclusion: In the present study of healthy individuals, long lasting depression symptoms predicted lower diastolic LV function at follow-up. A 5 unit higher cumulative HADS-D score gave similar detrimental effect of the peak mitral annular early diastolic velocity as 16 mm Hg and 13 mm Hg higher blood pressure in women and men, respectively. Thus, compared to the influence of well-known CVD risk factors on LV function, the effect size of long lasting depression is not negligible. Thus, long lasting depression symptoms should be taken into account when discussing subclinical LV diastolic dysfunction.

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Psychometric properties of the comprehensive Ethos towards Wellness Questionnaire (EtWeQ) in a Norwegian population: a replication and methodological study

B G A Fridlund,¹ J Martensson,¹ A Baigi² and A Brostrom¹

¹School of Health Sciences, Jönköping, Sweden ²Halmstad University, Halmstad, Sweden

Background: Wellness is a multidimensional state of being, describing an individual's ethos toward health with focus on wellbeing and quality of life. It reflects the positive dimensions of a holistic attitude including subjective and emotional-relational conditions, not the least from a cardiac promotive perspective.

Aim: to replicate and determine the psychometric properties of the 74-item comprehensive Ethos towards Wellness Questionnaire (EtWeQ) in a healthy Norwegian population in terms of content and construct validity as well as homogeneity and stability reliability.

Methods: A questionnaire with a methodological and developmental design based on both philosophical reasoning and empirical recommendations of wellness was sent on two occasions to 214 healthy middle aged participants.

Results: The three life context indexes and the ethos index showed an overall satisfactory construct validity (com-

munalities of >0.30, factor loadings >0.30 and factor total variance >50%). On two occasions four weeks apart, reliability in terms of homogeneity (Cronbach's alpha coefficient >0.70) and stability (intraclass correlation coefficient >0.70) were also considered satisfactory for the four indexes.

Conclusion: This newly developed and possibly only questionnaire that focuses on "grasping the big human picture", was found to be valid and reliable in the screening and follow-up of wellness and ethos in a healthy Norwegian population. The EtWeQ could be used as a generic complement to specific measurements in a cardiac promotive perspective.

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Family members experiences of care provided by ambulance staff in out-of-hospital cardiac arrest situations

A Bremer,¹ T Creutz² and J Pettersson Georgii²

¹University of Borås, Academy of Care, Working Life and Social Welfare and the Centre for Prehospital Research, Borås, Sweden ²Emergency Medical Services in the Region of Västra Götaland, Borås, Sweden

Purpose: Approximately 10 000 people in Sweden suffer from sudden cardiac arrest outside the hospital each year. Cardiopulmonary resuscitation (CPR) is started in about half of the cases. Treatment of patients with cardiac arrest in a pre-hospital context is complex and focus is placed first and foremost on the patient because of the acute and life-threatening condition. For relatives, it is a traumatic and upsetting experience to be present when a family member suffers from cardiac arrest. The purpose of this study was therefore to describe family members experiences of an out-of-hospital cardiac arrest (OHCA) situation and how the ambulance staff cared for them.

Methods: This pilot study had a qualitative design, based on six individual interviews with family members who were present when the patient suffered OHCA. The interviews were conducted with an initial open-ended question and follow-up questions based on the responses. The data were analysed by qualitative content analysis with an inductive approach. The analysis generated subcategories, which were clustered into seven main categories.

Results: The result describes the informants' situation management, responsibility handover and their hope and hopelessness in the situation. The result also describes the staff's care of family members by the categories closeness and distance, confirmation and exclusion, caring relationship and answered and unanswered questions. Family members described the OHCA situation as traumatic with feelings of panic, uncertainty, unreality, but also calm and rationality. Contentedness and gratitude for the ambulance staffs caring approach emerged. However, family

members sometimes were not allowed to decide if they wanted to witness the resuscitation attempts or not, and a lack of information led to unnecessary frustration.

Conclusions: Family members often have a need to talk to someone about their experiences of the OHCA situation, express their views on the care that was provided and receive feedback afterwards. Further research on family members' situation at OHCA is of great importance for the development of ambulance staff's skills in caring approaches.

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Applying the personalised patient education protocol in post myocardial infarction care - a service evaluation.

MO Lau-Walker¹ and A Landy²

¹King's College London, Florence Nightingale Faculty of Nursing & Midwifery, London, United Kingdom ²King's College Hospital, London, United Kingdom

Background: The integration of physical and mental health approaches to care delivers more effective and efficient healthcare services. While nurses play a vital role in integrating physical and mental healthcare for patients with coronary heart conditions the absence of assessment tools to systematically respond to individual patient constructs of their illness and their potential for recovery contribute to the difficulty of providing effective personalised care. The Personalised Patient Education Protocol (PPEP) was developed based on an evidence based approach to provide an effective personalised patient educational strategy.

Aims: To integrate the PPEP a psycho-educational intervention into current Cardiac Rehabilitation (CR) practice administered to in-patients following Myocardial Infarction (MI), and measure its effect on changes in patient illness beliefs; self-efficacy for cardiac diet and exercise, anxiety and depression and quality of life at three months.

Methods: A prospective longitudinal service evaluation of the PPEP on MI patients who attended a hospital between November 2013 and March 2014. Validated measures were used to assess patients' illness beliefs; self-efficacy for cardiac diet and exercise, anxiety and depression and quality of life prior to the CR Nurse Specialist visit during the in-patient period and repeated at three months. In addition, a narrative analysis was performed to evaluate patients' responses to the PPEP Patient Workbook.

Results: Seventy four patients were enrolled in this service evaluation initially and the mean age was 58 (SD±12), 78.4% male, 63.5% with partners, 21.6% live on their own and 58.1% in employment; with 50 patients completing the follow-up measures at three months.

The component of Illness Beliefs 'illness coherence' (P<0.001) and 'illness identity' (P<0.02) demonstrated a statistically significant change at three months, and while self-efficacy beliefs for exercise showed some significant improvement (p<0.006), adapting and adhering to healthy diet remained difficult to achieve. Overall quality of life did not improve, and there were no significant changes in anxiety and depression at three months.

Patients found the Patient Workbook helpful - 7 (SD±2.42) on a scale of 1-10 and the patient workbook was used for preparing for 'GP appointment' - 21.6%, 'Hospital consultation' - 20.3%, 'CR nurse appointment' - 13.5% and 'telephone consultation' - 1.4%.

Conclusion: The principles of the PPEP are relevant to CR practice in the UK and have clinical utility for patient assessment in post MI care.

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The assessment of patient confidence in medical care in hospital setting

S Pop,¹ G Florea,¹ I Preda,² M Valsan,¹ C Filimon,¹ L Boeru,¹ V Petculescu,¹ EL Antohi,¹ S Bubenek² and O Chioncel¹

¹Institute of Cardiovascular Diseases Prof. C.C. Iliescu, Cardiology 1, Bucharest, Romania ²Institute of Cardiovascular Diseases Prof. C.C. Iliescu, Bucharest, Romania

Background: Given the complexity of the actual healthcare system and the frequent exposure to highly-mediated technological procedures, patients often face situations in which they manifest distrust and anxiety towards medical personnel. This may become a barrier in delivery and compliance to appropriate medical care.

Aim: To investigate the perception of patients and the doctor-patient relationship during hospitalization.

Methods: An observational study was performed over a 2 week period, in 2012, in an emergency tertiary cardiovascular diseases center. 55 patients hospitalized in cardiology and cardiac surgery wards, were interviewed by an independent group of non-medical voluntary personnel and were asked to answer a questionnaire regarding the level of confidence and trust in medical healthcare.

Results: Of the 55 patients interviewed, 65% were male, with a mean age of 58+/-7 years. The majority (85%) were electively admitted for an invasive procedure. A percentage of 86.7% of these patients declared they were satisfied with the general hospital conditions. Most of the patients considered that they were well cared for during the hospitalisation (97.6%) and showed a high level of confidence regarding both physicians (97.5%) and nurses (96.5%). Although 91.1% of patients expressed a relief of anxiety after discussing with the doctor, a proportion of 36.8% felt they did not receive enough information and that neither the treating

physician nor the nurse gave enough time for detailed and qualitative information. A proportion of 13.6% perceived they did not understand their heart condition.

Conclusion: In spite of appropriate care during hospitalisation, patients may feel anxiety and distrust. This may be attenuated if the medical personnel (doctors and nurses alike) maintained an open attitude and tried to ensure that patients fully understand their condition and the procedure following. Consequently, it may also improve the level of compliance and acceptance of medical procedures.

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Sleep disturbances and risk of myocardial infarction among men aged 25-64 (who monica)
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V V Gafarov,¹ E A Gromova,¹ I V Gagulin,¹ D O Panov¹ and AV Gafarova¹

¹Institute of Internal Medicine, Novosibirsk, Russian Federation

Objective: We sought to examine the relationship between sleep disturbances (SD) and the risk development of myocardial infarction (MI) among men ages 25 to 64 years.

Methods: Within the framework of program, WHO MONICA-psychosocial was examined representative sample of men 25-64 years old (1994 year). Total sample was 657 persons. SD were measured at baseline with the use of the MONICA - psychosocial Interview SD scale. Incidence of news cases of MI was revealed at 14-year follow-up. Cox- proportional regression model was used for an estimation of hazard ratio (HR).

Results: Only 1/3 of the 25 to 64 -year old male subjects with the first MI referred to their sleep as "good", whereas 2/3 had SD (63.1%). The risk of development of MI within 5 years at group of men with SD was 2.43 (95%CI 1.27-8.59) times higher than without it. For the following 10 years, risk of development of MI was 2.6 (95%CI 1.35-9.41) times higher in men with SD. Within 14 years HR = 2.3 (95%CI 1.1-4.6); (p<0.05) Most frequently of MI occurred in men with SD and higher negative psychosocial factors, i.e. widowers, divorced, those with primary and not-completed secondary school education and those engaged in hard and moderate manual labor and head, with low index social network.

Conclusion: The results demonstrate that SD present a social problem and contribute greatly to the risk of MI in men. The highest frequency of MI occurred in men with SD and negative social gradient.

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Attitudes of health care professionals towards family involvement in care for patients with cardiovascular diseases

MLA Luttik,¹ S Agren,¹ E Goossens,² J Martensson,³ D Thompson,⁴ T Jaarsma⁵ and A Stromberg¹

¹Linköping University, Division of Nursing Science, Department of Medicine and Health Sciences, Linköping, Sweden ²Catholic University of Louvain (UCL), Department of Public Health and Primary Care, Leuven, Belgium ³Jonköping University, School of Health Sciences, Department of Nursing, Jonköping, Sweden ⁴Australian Catholic University, Centre for the Heart and Mind, Melbourne, Australia ⁵Linköping University, Department of Social and Welfare Studies, Linköping, Sweden

Background: There is increasing evidence supporting the relationship between family support and patient outcomes. Therefore, involving families in the care for cardiovascular patients is expected to be beneficial for patients. The aim of this study is to explore the attitudes of health care professionals (HCP) towards family involvement in the care for cardiovascular patients.

Methods: A survey was conducted in a sample of 495 delegates attending the annual EuroHeartCare congress organised by the Council on Cardiovascular Nursing and Allied Professions (CCNAP) in Norway, April 2014. The questionnaire consisted of background variables and the Family Importance in Nursing Care-Nursing Attitudes (FINC-NA) scale. The scale consists of 26 statements with a five-point Likert scale format (1 = strongly disagree, 5 = strongly agree; theoretical range 26-130) and can be divided into 4 subscales; family as a resource in nursing care (Fam-RNC), family as a conversational partner (Fam-CP), family as a burden (Fam-B) and family own resources (Fam-OR). Higher scores indicate more positive attitudes.

Results: In total 119 (24%) questionnaires were completed. The sample consisted of predominantly (91%) female HCP (mean age 43±10 years), working in the hospital setting (89%). Forty-nine percent of the HCP had a certificate or bachelor degree, 32% a master degree and 10% a doctorate degree.

Mean total score on the FINC-NA scale was 99±14. The majority of HCP (totally) agreed with the statement that it is important to identify family members of the patient (89%) and that family members should be invited to take an active part in the patient's care (82%). Hence, only 51% agreed with the statement 'I invite family members to take part in the patient's care'. HCP attitudes towards family involvement were significantly less favourable in younger nurses both with regard to the total scale and the three subscales (p ranging from 0.048 to 0.001). Lower educational level was significantly associated with a lower score on the total scale (p = 0.01) and on the subscales Fam RNC (p = 0.01) and Fam B (p = 0.02).

Conclusion: In general HCP viewed the family as important in care. However, attitudes towards actively inviting family to take an active part in the patient's care were less positive. Younger age and lower educational level were associated with less positive attitudes. Future studies exploring beliefs of HCP regarding their role towards families of patients are necessary. Education on the importance

and active family involvement of families in patient care seems necessary in basic education as well as in clinical practice.

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Knowledge as a determinant of attitudes towards the patient in terms of improving the cultural competence of contemporary cardiac nursing in Poland.

R Mroczkowska¹

¹Silesian Center for Heart Diseases, Department of Cardiology, Congenital Heart Diseases and Electrotherapy with the Division of Pediatrics, Zabrze, Poland

Poland's joining the European Union intensified migration of people from different cultures representing various values, lifestyles and customs.

Aim of work: The attempt to answer the question about the level of cultural competence of Polish cardiac nurses to provide holistic nursing care or to check the reasons for moral and ethical conflicts connected with providing culturally correct care towards patients of different religious background.

Materials and methods: The survey was conducted among professionally active cardiac nurses, in Silesia province in 2012 and 2013.

The authorial survey consisted of 42 questions.

Results: In the group of 204 nurses and male nurses, 198 people had a contact with patients of different cultures. The respondents claimed that most of these patients did not require special treatment (59.9%), while their different religious background was recognized by refusing specific food products and certain types of meat (11.1%), different attitude towards health and disease and proposed ways of treatment (27.7%), different rules of everyday life (33.3%) and by clothes and the way their everyday life is organized (41.6%). Such experience, in 59% of nurses, caused a feeling of moral dilemma, stress or aggression. It was stated that a total lack of knowledge of the care of patients of different religion was declared by 33% of the nurses. It should be emphasized that the lack of directed knowledge may be the reason for mental discomfort appearing in cardiac nurses, which leads to conflicts between nurses and patients.

Conclusions:

1. Knowing patient's culture and religion, which conditions his/her attitude towards life and disease, is essential to eliminate prejudices and anxiety among medical personnel which, in turn, impedes proper interpersonal communication.
2. Knowledge of patient's faith principles enables to create a culturally correct plan of nursing and ultimately provide the holistic care.

3. Polish cardiac nurses are interested in cultural diversity of patients. They are willing to enhance their knowledge in the topic, which leads to a conclusion that they treat transcultural care as a challenge for contemporary nursing.
4. Cultural stereotypes very often occur in nurses' course of work, which influences its quality. It is necessary to adjust the health care system to the needs of all patients regardless of their origin or religion.

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Possibilities to apply the chronic care model in patients with chronic coronary artery disease

M Todorova,¹ G Petrova¹ and P Pavlova²

¹Medical University Plovdiv, Department of Health Care Management, Plovdiv, Bulgaria ²St. George University Hospital, Clinic of Cardiology, Plovdiv, Bulgaria

Background: The increasing share of patients with chronic diseases in Bulgaria requires development of efficient policies for high-quality health care to obtain better health results. In our country, the lack of specialized nurses able to provide health training and client-centered approach to the care for patients causes problems relating to the adaptation to life with a chronic disease.

Purpose: The objective of this study is to reveal problems of psycho-emotional and physical nature that hinder the normal existence of patients with chronic coronary artery disease, and to set out guidelines for efficient approach of nurses to health care.

Methods: The study was conducted at a university hospital in Bulgaria between January and March 2014. It covered 98 patients with chronic coronary artery disease. To attain the objective of the study we used a generic instrument for assessment of the quality of life: SF-36 containing 36 questions divided into 8 scaled scores with information about the physical and mental health of studied subjects. In addition, we used a questionnaire concerning health services and awareness, psycho-emotional status and capability to handle everyday tasks.

Results: The data obtained concerning the possibilities for physical functioning in daily life show expected differences in the volume of activities, the age and the severity of the disease. Patients reported that they encountered difficulties in climbing stairs (28.76%) and serious limitations in carrying out physically demanding work, lifting weights or other high load tasks (64.90%). Anxiety was discovered in 23.40% of the respondents leading to shortening professional and daily tasks, feeling of tiredness and reduced vitality. A correlation between age and the impact of anxiety and emotional status on patients' daily activities ($P = 0.015$; $\chi^2 = 8.44$) was discovered.

Conclusion: The Chronic Care Model stresses on the active role of nurses in providing complex health care and motivated inclusion of the patient in the health team. We propose a plan for training of patients to help them overcome psychosomatic factors that hinder their adaptation to the illness and the capacity to cope with social aspects of life. Discussed are: the possibility to increase patient's competency, the awareness of the illness, the training in self-management, the healthy way of life and coping with stress.

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Illness perception and health related quality of life of patients with coronary heart disease

K Sigurlasdottir,¹ MH Svavarsdottir² and AK Sigurdardottir²

¹Akureyri Hospital, Akureyri, Iceland ²University of Akureyri, School of Health Sciences, Akureyri, Iceland

Purpose: The aim of this study was to assess illness perception and health related quality of life of patients with coronary heart disease.

Methods: This was a quantitative study using two self-administered questionnaires, Illness Perception Questionnaire-Revised (IPQ-R) and Short Form Health Survey (SF-36). Two measurements were made, the first at admission to hospital, and the second five months later.

The sample consisted of patients with coronary heart disease admitted to a university hospital in Iceland between November 2011 and April 2012.

Results: For the first measurement 119 completed questionnaires were returned, and 69 questionnaires were returned for the second measurement. Most of the responders were male, 76% on time one and 71% on time two.

Association between illness perception and general health and mental wellbeing of patients with coronary artery disease was found. A statistically significant association was found with better general health and having the perception that the disease was chronic and could worsen suddenly ($p = 0,005$), and could have influence on their life ($p = 0,013$). Mental wellbeing was better for those who realized that the disease may influence their life ($p = 0,008$) and persons living in the capital region ($p = 0,047$). Illness perception and health related quality of life increased with time. Five months after discharge, the participants were aware that the disease was chronic and could worsen suddenly, that the disease would not necessarily have negative effects on their life or influence their mental health. Correlation was found between physical health-related quality of life and illness between most measured factors.

Conclusion: It can be concluded from this study that education and patient's understanding helps the patient to take care of own health and hence increases patient's safety. Increased patient education and support from health professionals seems to be more effective for younger patients,

females and those who are still working. The study indicates that health professionals are reaching out to a certain group of patients. However, patient over 68 years, men in particular and those who are unemployed, invalid and pensioner need special support and patient education.

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The cognitive state of patients with secondary hypertension

A Soroceanu,¹ M Mazur,¹ V Lisnic,¹ S Soroceanu,¹ L Grib¹ and L Mazur-Nicorici¹

¹State University of Medicine and Pharmacy, cardiology, Chisinau, Moldova, Republic of

Background: Cognitive dysfunctions are common debilitating manifestations in patients with systemic lupus erythematosus (SLE) and secondary hypertension.

Objective: The aim of this study was to analyze the impact of hypertension on cognitive function among the patients with SLE. **Methods:** We examined 84 consecutive patients with SLE. Age limits ranged from 18 to 69 years, mean age was 32.02 ± 1.3 years. Cognitive function was evaluated by Mini Mental State Examination (MMSE), Folstein, 1975.

Results: During the study identified 24 (28,6%) cases of where MMSE < 24. Severe cognitive decline was found in 5(5,95%) cases with hypertension and stroke. Antiphospholipid antibodies detected in 21(87,5%) patients with secondary hypertension and cognitive dysfunction. Thickness of the GIM was established at 13 (36,1%) patients, ranging from 0,62-1,3 mm in patients with secondary hypertension and cognitive dysfunction. Mean values of total Ch (5.6 mmol/l) and LDL-Ch (3.3 mmol/l) were increased more marked in the group with cognitive dysfunction. Among 24 patients with hypertension and cognitive dysfunction were detected 12(14,3%) patients with cutaneous vasculitis, 12(14,3) valvular heart disease, 7(7,8%) cumulative dose of glucocorticosteroids >10 g., 4(4,8%) diabetes mellitus.

Conclusions: Hypertension and associated disturbances might be susceptibility factors for cognitive decline in SLE patients. Cognitive dysfunction has been associated with immunological changes such as antiphospholipid antibodies, cutaneous vasculitis, valvular heart disease and diabetes mellitus, suggesting the need for a more intensive preventive strategy to optimize the management of neuropsychiatric lupus

Prevention and rehabilitation

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High levels of risk factors but poor secondary prevention for people treated for coronary heart disease in Jordan

A Ashour,¹ D Fitzsimons,¹ P Slater,¹ B O'Neill,¹ M Al Nemri² and M Jarrah³

¹University of Ulster, Jordanstown, United Kingdom ²Queen Alia Heart Institute, Amman, Jordan ³King Abdullah University Hospital, Irbid, Jordan

Purpose: Coronary heart disease (CHD) is a major health problem in Jordan and the leading cause of death. It is a progressive condition but effective secondary prevention (SP) that includes behavioural change and medication reduces risk. Little is known about the current provision of SP for patients with CHD in Jordan. This study was designed to explore the current provision of SP from perspective of professionals and to evaluate patients' risk factors, SP interventions received and associated outcomes.

Method: A quantitative repeated measures research design was used with a purposive sample from three interventional hospitals. A questionnaire was completed by 16 key staff, and 180 patients were evaluated in hospital and after 6 months. All patients had either had an acute myocardial infarction (AMI) treated medically, a Percutaneous Coronary Intervention (PCI) or a coronary artery bypass graft (CABG). The data was collected using self-reported questionnaires and a medical record review during hospitalisation and six months later. The European guidelines on CHD prevention (2012) were used to define recommended targets.

Results: Provision of SP services in Jordan was poor compared to Guideline recommendations. There was no cardiac rehabilitation, smoking cessation or SP available post-discharge. The prevalence of risk factors in patients was high during hospitalisation and also at follow-up. Of the 180 patients at discharge 77% were obese or overweight, 59% were smokers, 59% had low levels of physical activity, 51% had elevated LDL, 58% had uncontrolled blood glucose and 11% had uncontrolled blood pressure. Recording of risk factor history and current status was incomplete. The majority received brief physician advice about medications (72%) and smoking (49%). Some small improvements at 6 months were observed. Obesity and overweight reduced to 75%, smoking reduced to 47%, physical inactivity reduced to 41%. On the contrary uncontrolled blood glucose and blood pressure increased to 64% and 25% respectively.

Conclusion: Despite an extremely high prevalence of risk factors in this population, the provision of SP is poor. There was much greater focus on medical treatment and medication rather than on lifestyle modifications. Secondary prevention of CHD in Jordan requires urgent improvement and the potential role of nurses in SP should be enhanced.

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Gender peculiarities of structural and functional changes of the myocardium in patients with arterial hypertension and diabetes against the background of obesity

OM Bilovol,¹ LR Bobronnikova¹ and IA Ilchenko¹

¹L.T.Malaya Institute of Therapy, Clinical Pharmacology, Kharkiv, Ukraine

Purpose: To determine the peculiarities of changes of structural and functional parameters of myocardium by gender in patients with arterial hypertension, type 2 diabetes mellitus (DM-2) against the background of obesity.

Methods: The study involved 54 patients (26 women and 28 men, mean age 49.8 ± 2.7 years) with obesity (body mass index (BMI) 34.2 ± 2.8 kg / m²), stage II hypertension and DM-2. The following indexes were assessed: BMI; waist circumference (WC); hip circumference (HC); waist-to-hip ratio (WC/HC); the amount of adipose tissue (AT) in the body by electrical impedance tomography; the visceral fat thickness (VFT) by ultrasonography; echocardiography; glycemia and lipidogram. Kendall's t-test and Fisher's exact test were used to assess the correlation.

Results: The revealed changes of structural and functional parameters of myocardium in examined patients had gender differences. There was a direct correlation between the aortic root size (ARS) and BMI ($t = 0.14$, $P = 0.041$) in women; and between ARS and WC, WC / HC ($t = 0.32$, $P = 0.045$; $t = 0.24$, $P = 0.031$, respectively) in men. In women, there was a direct correlation between the diastolic diameter of the left ventricle (LV) with BMI, WC, HC and VFT ($t = 0.22$, $P = 0.007$; $t = 0.21$, $P = 0.009$; $t = 0.17$, $P = 0.010$; $t = 0.16$, $P = 0.025$, respectively). In men, an inverse correlation was revealed between LV ejection fraction and BMI, WC, VFT and amount of AT ($t = -0.19$, $P = 0.043$; $t = -0.30$, $P = 0.008$; $t = -0.29$, $P = 0.011$; $t = -0.39$, $P = 0.014$, respectively). LV mass directly correlated with indices of abdominal (WC, WC / HC) and visceral (VFT) obesity in both sexes, but additional correlation of LV mass with the indices of general obesity (BMI, amount of AT) was found in women, and with the index of peripheral obesity (HC) in men. LV mass index directly correlated with WC / HC and VFT in women and men. Men had a direct correlation between the diameter of the right ventricle and BMI ($t = 0.24$, $P = 0.006$).

Conclusions: Abdominal obesity is a significant risk factor for cardiovascular complications. It contributes to formation of LV hypertrophy in patients with hypertension and type 2 diabetes mellitus of both genders. The peculiarities of structural and functional parameters of myocardium differ by gender: women are characterized by the development of dilatation of the left heart without changes in LV ejection fraction, and men tend to have an expansion of the aortic root and the decrease of LV systolic function without changing its diameter.

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Surveillance, control, and prevention systems of hypertension in Singburi, Thailand: policy to action

V Tienthavorn¹ and N Eaktasang¹

¹Phayao University, School of Medicine, Phayao, Thailand

Hypertension is a chronic non-communicable disease (NCD) that occurs when blood pressure is consistently high for long periods. Hypertension affects all age groups, but the risk of hypertension increases with age. However, finding high blood pressure early, treating, and keeping it in the normal range can reduce the risk of developing complications such as stroke, ischemic heart, and renal failures. Thailand has 10 million hypertension patients in 2013. Hence, Thai Government has policy to reduce the NCD such as diabetes and hypertension. This study was to convert disease oriented to health promotion approach to primary health care, using “VICHAI’s 7 Color Balls Model”, which was used for primary screening of hypertension. The study investigated in Singburi, Thailand. The target population aged 15-65 which covering more than 90% of Singburi population. The screening result (97.81%) was classified by types and levels of severity of hypertension (blood pressure). The 7 colors are referred to normal (<120/80 mmHg, white), risk (120/80–139/89 mmHg, light green), risk medication (<139/89 mmHg, dark green), mild (140/90–159/99 mmHg, yellow), moderate (160/100–179/109 mmHg, orange), severe (>180/110 mmHg, red), and patients with complication (black). The results were recorded to keep information on their health change. The control and prevention systems were developed to follow up patients using investigation, health education to encourage strictly medication and their behavioral change with best practice of 3Es (Eating, Exercise, Emotion) and 3Rs (Reducing tobacco, alcohol, obesity). After 8 months of project implementation, normal group increased from 116,663 to 120,566 (3.35%), significantly severe patients were changed to moderate of 82.87% and the complication patient with STEMI decreased of 17.14%. Furthermore, the treatment cost decreased from 18.13 to 14.21 million baht. This project is expanding to be implemented in all provinces of Thailand as it is now one of the priority government policy.

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Achieving blood pressure and LDL targets in cardiac rehabilitation centres in Ireland: how well are we meeting European Guidelines on cardiovascular disease prevention recommendations.

N Fallon,¹ M Kerins,² G Mckee,³ S Charles,⁴ C Finn,¹ B Hannon,⁵ H Newton,⁵ J Stephenson⁶ and G Prizeman⁷

¹Tallaght Hospital, Cardiac Rehabilitation, Dublin, Ireland ²St James Hospital, cardiac Rehabilitation, Dublin, Ireland ³Trinity College, Dublin, Ireland ⁴St Colmcille’s Hospital, Loughlinstown, Cardiac Rehabilitation, Dublin, Ireland ⁵Beaumont Hospital, Cardiac Rehabilitation, Dublin, Ireland ⁶Wexford General Hospital, Cardiac Rehabilitation, Wexford, Ireland ⁷St James Hospital/ Trinity College Dublin, Centre of Practice and Healthcare Innovation, Dublin, Ireland

The guidelines recommend that office or clinic systolic blood pressure should be lowered to <140 mmHg and dia-

stolic blood pressure to < 90mmHg. The guidelines also recommend a target Low Density Lipoprotein (LDL) of <1.8mmol/L for very high risk patients, that is patients with documented cardiovascular disease. Achieving target goals in blood pressure (BP) and lipid management is paramount in the secondary prevention of cardiovascular disease. Risk factor management is an integral part of cardiac rehabilitation. Cardiovascular disease prevention programmes such as cardiac rehabilitation are nurse-coordinated programmes, which are well integrated into healthcare systems, providing care for cardiac patients and opportunity for short term monitoring and targeting of risk factors. The aim of this study is to ascertain the proportion of patients who achieved BP and LDL targets as recommended by the European Guidelines on cardiovascular disease prevention, post cardiac rehabilitation.

Method: A retrospective study was undertaken on patients who attended a cardiac rehabilitation programme in five centres in Ireland over a 1-year period. The patients’ systolic and diastolic BP pre and post cardiac rehabilitation and the patients’ LDL were taken during cardiac rehabilitation, as per usual care. The data was analysed using SPSS 22. Frequencies and descriptive statistics are used to ascertain the proportion of patients reaching recommended levels. T tests were used to examine if there were significant improvements over the duration of the cardiac rehabilitation program.

Results: Data on 873 patients from five sites was recorded. The majority were male (81%), average age 63 years and 17% had diabetes. The pre-programme average systolic BP was 129 mmHg (SD 18.4), 63% meeting the target guideline. Post cardiac rehabilitation programme the average systolic BP had reduced to 124 mmHg (SD 16.1), 73% meeting the target guideline. This improvement was significant ($p = <0.001$). The average pre-cardiac rehabilitation diastolic BP was 75 mmHg (SD 9.1), 83% meeting the target guideline. Post cardiac rehabilitation, the average diastolic BP was reduced to 73 mmHg (SD 8.7), 85% of patients meeting this target guideline. This improvement was also significant ($p = <0.001$). LDL was on average, 1.82 mmol/L (SD 0.79) and only 53% of patients met the LDL guideline level for very high risk patients.

Conclusion: Despite education, changes in lifestyle and drug titrations, at least 15% of patients do not meet BP guideline targets and a staggering 47% of patients do not meet LDL guideline targets post cardiac rehabilitation.

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Visualization of coronary artery calcification and the influence on preventive therapy and lifestyle modification

RE Mols,¹ JM Jensen,¹ NP Sand,² D Bagdat,² CF Christensen,¹ P Vedsted,³ H Boetker,¹ LH Nielsen⁴ and BL Noergard¹

¹Aarhus University Hospital, Department of Cardiology, Aarhus, Denmark
²Sydvestjysk Hospital-Esbjerg, Department of Cardiology, Esbjerg, Denmark
³Research Unit for General Practice, Department of Public Health, Aarhus University, Aarhus, Denmark
⁴Hospital Lillebaelt Vejle, Department of Cardiology, Vejle, Denmark

Background: The relation of coronary computed tomography (CCTA) findings in symptomatic patients regarding adherence to preventive medical therapies and risk modification is unknown. The purpose of this study was to test the effect of “visualization” of coronary artery calcification and brief recommendations on cholesterol levels and other risk variables in patients with a new diagnosis of coronary artery disease (CAD).

Methods: A prospective two-center randomized controlled trial. Patients were randomized 1:1 to standard follow-up in general practice or intervention. Patients were followed for six months. The primary end-point was change in serum total-cholesterol.

Results: The study included 189 patients, aged 61 ± 12 years (males 57%), and median (IQR, range) Agatston score was 166 (101-334, 70-2054). Intention-to-treat analysis showed a tendency towards a more effective absolute reduction in total-cholesterol levels in the intervention group (1.32 mmol/L versus 1.18 mmol/L, $P = 0.181$). In a subgroup analysis excluding patients discontinuing statin therapy due to side effects ($N = 147$), the 6-months reduction in total-cholesterol was more efficient in the intervention than in the control group, 1.71 mmol/L versus 1.44 mmol/L, ($P = 0.027$). More patients in the control group continued smoking (22% versus 9%, $P = 0.014$) and unhealthy dietary behaviour (64% versus 44%, $P = 0.005$). Weight loss was more pronounced in the intervention group (-1.5 kg versus +0.5 kg, $P = 0.001$) and furthermore there was a tendency towards a higher degree of statin adherence in the intervention group ($P = 0.056$).

Conclusion: Visualization of coronary artery calcification and brief recommendations regarding risk modification after CCTA in symptomatic patients with a new diagnosis of CAD has a positive effect on serum total-cholesterol levels, statin adherence, smoking cessation, healthy dietary behavior, and weight loss.

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Groin dressing post cardiac catheterization: traditional pressure vs transparent film

R Al-Shualah¹

¹Royal Commission Hospital in Jubail, Training & Education Department, Jubail, Saudi Arabia

Purpose of the study: To determine the efficacy of using a small transparent non pressure dressing compared with

the traditional controlled pressure dressing applied to the femoral artery puncture wound site to maintain haemostasis following cardiac catheterization procedures.

Methods and Design: An experimental design, randomized study.

Patients: 80 post cardiac catheterization patients were randomized to have their groins dressed either with pressure dressing ($N = 40$) or Transparent Film Dressing ($N = 40$). Patients ambulated 8 hours after the procedures. Outcome variables were hematoma formation or bleeding, patient discomfort, and nurse-reported ease of observation of the groin puncture site after the procedure. Five instruments were used for data collection: 1) Demographic and medical data sheet, 2) Hematoma Formation and Bleeding Scale, 3) Skin Integrity Scale, 4) Patient Discomfort and Pain Scale & 5) Nurses Ease of Assessment Scale.

Results: Results of the study showed that 100% in transparent film dressing (TFD) group vs 55% in pressure dressing group reported feeling very comfortable (p value of 0.003). Hematoma formation was equal in the two dressing groups with no incidence of bleeding complications. Nurses rated the ease of assessing the groin significantly higher for TFD than for pressure dressings (p value of 0.000).

Conclusion: Dressing of the puncture site after cardiac catheterization with TFD was more comfortable than the conventional pressure dressing without any difference in hematoma or bleeding complications. So TFD can be used safely and comfortably after achieving hemostasis.

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Optimization antihypertensive therapy in patients with metabolic syndrome

J Uzokov¹

¹Tashkent Medical Academy, Tashkent, Uzbekistan

Background: MetS is used to identify patients at increased risk for cardiovascular disease (CVD), type II diabetes mellitus (T2DM), and all-cause mortality. Globally, the overall prevalence of raised blood pressure in adults aged 25 and over was around 40%. Epidemiological studies in hypertension and MetS have shown that factors other than high blood pressure play a role in the mechanism of CV morbidity and mortality. Identifying optimal drug combinations to treat of hypertensive patients with metabolic syndrome is one of the actual problems.

Aim: Optimization antihypertensive therapy in patients with MetS, using three fixed dosed combination of drugs.

Material and methods: The present study was carried out in a clinical hospital medical academy. We have randomized 327 patients (aged 48-72 years, mean 58 ± 6) who have hypertension and metabolic syndrome comparing with the

control group 124 patients. In the first group patients were given 5 mg amlodipine, 5 mg bisoprolol, 25 mg losartan per day. In the control group patients were given 5 mg amlodipine, 5 mg bisoprolol, 4 mg perindopril per day. Patients underwent all baseline investigations like complete blood count, liver function tests, kidney function tests, blood sugar level, fundoscopy, ECG, total cholesterol (mg/dl), serum creatinine (mg/dl), SGPT (U/L). Above investigations were done at the start of the study and at the end of the study. We have examined the patients' systolic blood pressure (SBP), diastolic blood pressure (DBP), ambulatory blood pressure monitoring every week during the 4 weeks.

Results: In the first group patients the mean systolic blood pressure decreased after 4-weeks i.e. from visit-1 to visit-4 (160.7 ± 13.61 to 123.6 ± 9.65 mm Hg) and the mean diastolic blood pressure also decreased after 4-weeks i.e. from visit-1 to visit-4 (103.4 ± 3.25 to 81.2 ± 4.02 mm Hg) ($p < 0.001$); in the control group patients the mean systolic blood pressure decreased after 4-weeks i.e. from visit-1 to visit-4 (164.1 ± 4.17 to 131.9 ± 6.72 mm Hg) and the mean diastolic blood pressure decreased after 4-weeks i.e. from visit-1 to visit-4 (105.3 ± 5.03 to 83.5 ± 3.83 mm Hg) ($p < 0.001$).

Conclusion: Amlodipine + bisoprolol + losartan in fixed dose combination have showed significant blood pressure control in hypertension patients with MetS and the antihypertensive effect was greater than amlodipine + bisoprolol + perindopril study groups.

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Dynamic of main characteristics of cardiovascular risk in subjects under non-pharmacological intervention and the natural dynamics in a cohort study.

O Molchanova,¹ GF Andreeva¹ and AN Britov¹

¹National Research Center for Preventive Medicine, Moscow, Russian Federation

The aim was to evaluate the effects of dietary intervention in adults with cardiovascular risk factors and the natural dynamics in a cohort study.

Methods: 1101 men (aged 41.9 ± 11.2) and 1104 women (aged 42.6 ± 9.2) were examined in cohort study. Subjects with high normal BP, cardiovascular risk (age, heart rate >85 , heredity, obesity) were eligible for study. Modification of diet included: increase dietary potassium and fiber, decrease: sodium, caloric restriction in obese. The preventive intervention period of the study was 3 years. Intervention group consisted of 203 subjects, control group – 252. Statistical analysis was done in SAS.

Results: At baseline the groups didn't have any significant differences. Heredity related only with DBP and only

in women ($p < 0.05$). SBP was strongly correlated with age and weight: $p = 0.0001$, $p = 0.0001$ in women and $p = 0.0001$, $p = 0.0045$ in men. The same was true for DBP: $p = 0.0001$, $p = 0.0001$ in women and $p = 0.0013$, $p = 0.0001$ in men. Increase of age by 1 year SBP $\uparrow 0.5$ in women, 0.4 in men, DBP $\uparrow 0.2$ in both. By stepwise regression analysis explains 24% of SBP variability and 9% of DBP variability in men. In women - 20% and 13 % respectively. At the end of study a significant weight reduction was observed in the intervention group: 75.02 ± 1.17 in women and 69.56 ± 0.63 (kg) ($p < 0.05$) in men. In controls weight increased: 82.07 ± 3.08 in women ($p < 0.05$) and 75.33 ± 2.89 (kg) ($p < 0.05$) in men. BP decreased in the intervention group: $- 3.27$ for SBP and $- 2.09$ mmHg for DBP in women; $- 1.92$ and $- 1.91$ mmHg in men respectively. In control: BP increased 2.97 mmHg SBP and 1.29 mmHg for DBP in women and 2.56 mmHg and 2.39 mmHg in men respectively (all $p < 0.05$).

Conclusion: Nonpharmacological intervention had a positive effect on the dynamics of the main characteristics of CVD risk compared with the natural dynamics in middle-aged subjects with high normal BP.

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Motivational interviewing and medication review in coronary heart disease (MIMeRiC). Study protocol of a RCT investigating effects on clinical outcomes, adherence and quality of life

M Johansson Ostbring,¹ L Hellstrom,¹ T Eriksson² and G Petersson¹

¹Linnaeus University, eHealth Institute, Kalmar, Sweden ²Lund University, Department of Clinical Pharmacology, Lund, Sweden

Purpose: A patient-centered follow up of medicines that acknowledge the importance of patients' attitudes as well as the therapeutic problems can improve care for cardiac patients. The aim of this RCT is to investigate the effects on both secondary preventive measures and medication adherence, as well as on quality of life and health care need.

Methods: A randomized controlled study with 200 + 200 patients followed for 12 months started inclusion in October 2013. NCT02102503

Patients with CHD, admitted to the secondary prevention program at a county hospital are invited to the study. The study period starts after the standard care process at the out-patient clinic, usually 2-3 months after discharge.

Intervention: A clinical pharmacist meets the patient at the cardiology clinic for a medication review and uses Motivational Interviewing (MI) to elicit attitudes, motivations and drug-related problems in order to help the patient find a safe and rational medication use as well as more posi-

tive attitude. Any therapy changes are discussed with the cardiologist. The consultation is followed by contacts by phone until problems are solved. For patients who have negative attitudes towards their medicines according to Beliefs about Medicines Questionnaire-Specific (BMQ-S) four MI-consultations in person or by phone is offered.

A second pharmacist consultation is offered at 11 months after discharge, the purpose is to renew motivation and find any new drug-related problems. Any therapy problems found in this stage are referred to the primary care physician.

The primary outcome measure is proportion of patients who achieve the LDL-cholesterol goal. Secondary measures are SBP<140mm Hg, adherence to each preventive drug measured from the Swedish Prescribed Drug Register, and for lipid-lowering drugs also according to the Morisky Medication Assessment Scale 8-items, health related quality of life as measured by the EQ5D-5L and HeartQoL and emergency visits and hospital admissions due to cardiovascular disease.

Results: Until September 2014, 99 patients have been included. 55 % of patients have been found to have negative attitudes towards their medicines. 45 patients in the intervention group have had consultations, and nine of these have experienced both steps of the intervention. The study is planned to include patients for another two years and to have results in 2017.

Conclusion: The study is ongoing and have the potential to improve important outcomes and also process measures for better care of CHD patients

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Optimization antihypertensive therapy in patients with metabolic syndrome

J Uzokov¹

¹Tashkent Medical Academy, Tashkent, Uzbekistan

Background: Globally, the overall prevalence of raised blood pressure in adults aged 25 and over was around 40%. Epidemiological studies in hypertension and MetS have shown that factors other than high blood pressure play a role in the mechanism of CV morbidity and mortality. Identifying optimal drug combinations to treat of hypertensive patients with metabolic syndrome is one of the actual problems.

Aim: Optimization antihypertensive therapy in patients with MetS, using three fixed dosed combination of drugs.

Methods: The present study was carried out in acinical hospital. We have randomized 327 patients (aged 48-72 years, mean 58±6) who have hypertension and metabolic syndrome comparing with the control group 124 patients. In the first group patients were given 5 mg amlodipine, 5

mg bisoprolol, 25 mg losartan per day. In the control group patients were given 5 mg amlodipine, 5 mg bisoprolol, 4 mg perindopril per day. Patients underwent all baseline investigations like complete blood count, liver function tests, kidney function tests, blood sugar level, fundoscopy, ECG, total cholesterol (mg/dl), serum creatinine (mg/dl), SGPT (U/L). Above investigations were done at the start of the study and at the end of the study. Systolic blood pressure (SBP), diastolic blood pressure (DBP), ambulatory blood pressure monitoring was performed every week during the 4 weeks.

Results: In the first group patients the mean systolic blood pressure decreased after 4-weeks i.e. from visit-1 to visit-4 (160.7 ± 13.61 to 123.6 ± 9.65 mm Hg) and the mean diastolic blood pressure also decreased after 4-weeks i.e. from visit-1 to visit-4 (103.4 ± 3.25 to 81.2 ± 4.02 mm Hg) (p < 0.001); in the control group patients the mean systolic blood pressure decreased after 4-weeks i.e. from visit-1 to visit-4 (164.1 ± 4.17 to 131.9 ± 6.72 mm Hg) and the mean diastolic blood pressure decreased after 4-weeks i.e. from visit-1 to visit-4 (105.3 ± 5.03 to 83.5 ± 3.83 mm Hg) (p<0.001).

Conclusion: Amlodipine + bisoprolol + losartan in fixed dose combination have showed significant blood pressure control in hypertension patients with MetS and the antihypertensive effect was greater than amlodipine + bisoprolol + perindopril study groups.

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Hospital's rehabilitation of patients with mechanical assistance devices.

E Molka,¹ K Bugajska-Sysiak,² I Cogieli,² A Szelag,² B Wolniczek,² A Zielinska-Meus,² K Oleszczyk² and A Wypych-Zych³

¹7-th Clinical Hospital of the Silesian Medical University in Katowice, Katowice, Poland ²Upper Silesian Rehabilitation Center Repty, Tarnowskie Gory, Poland ³Royal Brompton Hospital, London, United Kingdom

Introduction: Mechanical heart assist device is implanted directly into the heart of a patient. Pump is designed for long term, home use, it is controlled, monitored and powered using the current passes through driveline to an external controller and batteries.

Aim: Preparation of optimal rehabilitation programs for patients with mechanical heart assistance in order to return to normal life at the home.

Material and methods: Patients hospitalised in an upper rehabilitation centre "REPTY" since 03/2010 to 09/2014. Patient group consisted of 21 patients - 15 with Heart Ware type I representing (72%) and 6 with Heart Mate II type (28%). For each patient, a series of individually-run rehabilitation with an experienced physiotherapist was prepared. The programs were based on guidelines of the rehabilitation centre.

Results: Age: average 51 years, the oldest patient was 67 y/o, the youngest patient was 17 y/o. Length of stay in the facility: average - 20 days, the shortest stay 4 days, the longest 36 days. Used a comprehensive improvement of the C/D: individual exercises, isometric exercises with resistance, respiratory, general-improving, used postural drainage of the lower limbs, 2 x cycling training with interval, marching training, psycho education, autogenic training, applied education in the fair exercise, diet, self-control, coping with stress; TEST 6-minute, Corridor: 95% of patients had not performed 6' (I - Preliminary, at admission), (1 patient was not performed because of the strong polyneuropathy), 62% of patients had not performed 6' (II - at discharge) TEST AND - at admission: the average walking distance was 300 meters at discharge 424 meters, the smallest distance of 135 meters walking at discharge 300 m., the largest distance of 460 m. walk. 510 m. at discharge-produced the increase in walking distance by 30%; the degree of fatigue according to the Borg scale (20 pts.) TEST and assuming patients assessed 11 - 13 pts. by Borg TEST II at discharge, patients rated 8 - 11 pts. by Borg- as the improvement in exercise tolerance improved their subjective feeling of fatigue.

The most common complications: cardioverter-defibrillator battery discharge, wound infection, weight gain, respiratory infections, infection of the mouth, cholecystitis, general weakness, dizziness, bleeding and pain in the lower limbs.

Conclusion: Individualised cardiac rehabilitation program allowed patients independence and increase physical activity to the point which allows them to return to home life with the support of family members.

Table I.

Risk factors	Gr I	Gr II	p
Total cholesterol [mg%]	194,68 ± 41,29	193,73 ± 45,31	0,8804
Triglycerides [mg%]	126,61 ± 98,16	133,72 ± 68,16	0,5222
High-density lipoprotein cholesterol [mg%]	54,94 ± 16,72	52,03 ± 15,29	0,1905
Blood pressure diastolic [mmHg]	121,55 ± 13,11	128,01 ± 15,4	0,0021
Hypertension %	60,53	77,19	0,2811
Diabetes type2 %	5,6	12,86	0,1321
Obesity %	11,26	15,78	0,4273
Smoking %	18,3	14,03	0,4743
Metabolic syndrome %	8,45	20,46	0,0504
SCORE %	1,07 ± 0,54	2,82 ± 1,79	0,0000

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Prevalence of prehypertension in young adults and the related variables.

I P Borges,¹ ECS Peixoto,² C Souza,² RTS Peixoto³ and RTS Peixoto⁴

¹Rio de Janeiro State Government, Rio de Janeiro, Brazil ²Fluminense Federal University, Rio de Janeiro, Brazil ³Polícia Militar do Rio de Janeiro, Rio de Janeiro, Brazil ⁴Aloysio de Castro State Institute of Cardiology, Rio de Janeiro, Brazil

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Prevalence of cardiovascular risk factors among women during and after menopause.

I Nowakowska,¹ L Motyka,¹ D Niestroj-Tlolkka,¹ M Janusz-Jenczen¹ and A Mlynarska¹

¹Medical University of Silesia, Katowice, Poland

Number of cardiovascular events in women during the peri- and postmenopausal period significantly increases. It can be caused by inadequate control of cardiovascular risk factors. Aim of the study was to compare the prevalence of cardiovascular risk factors and its severity in women during and after menopause.

Methods: In Poland menopause statistically starts about 49 years. The study included 242 women without a previous diagnosis of ischemic heart disease. Included women were divided into 2 subgroups: Group I – age 45-54, before the menopause (71 respondents – 29,3%); Group II - age over 55, after the menopause (171 respondents – 70,7%). In all, selected cardiovascular risk factors and cardiovascular risk based on the SCORE tables were evaluated. The obtained data were statistically analyzed.

Results: The exact results are presented in the table below. Patients in the group II after menopause have higher cardiovascular risk in SCORE, as well as statistically higher prevalence of metabolic syndrome and elevated diastolic blood pressure.

Conclusion: Most of cardiovascular risk factors do not difference between women during and after menopause.

Background: Worldwide, several studies have been conducted about the association between hypertension in childhood and adolescence and socio-demographic factors: lifestyle, family history and anthropometry.

Objective: This study aims to identify the prevalence of prehypertension and related variables in young adults.

Methods: Cohort study. The variables were collected by questionnaire or measures. Univariate analysis was performed using the chi square and it was performed five

multiple logistic regression models for the variables with $p < 0.10$ in the univariate analysis. The students were from three courses, either college as vocational school, were evaluated: gender, age, course, skin color, income, education, lifestyle, history of hypertension, weight, waist circumference and prehypertension defined as VII Joint National Committee: systolic 120-139 and diastolic 80-89 mmHg.

Results: A total of 394 students were evaluated. There were 309 (78.43%) in the normal group (NG) and 85 (21.57%) in prehypertension group (PH) of students. It was found in NG and PG, respectively: females 254 (82.2%) and 44 (51.8%) ($p < 0.001$); age (three age ranges: until 19 years, 20-25 and 25-30) more frequent in older ($p = 0.001$); ethnicity (self declared) black 16 (5.2%) and 11 (12.9%) ($p < 0.001$); 62 mother's hypertension (20.1%) and 28 (32.9%) ($p = 0.024$); overweight 34 (11.0%) and 17 (20.0%) ($p = 0.045$); obese 3 (1.0%) and 10 (11.8%) ($p < 0.001$); increased abdominal circumference 37 (12.0%) and 19 (22.3%) ($p = 0.024$). At least one of five multiple logistic regression models were associated with absence or presence of prehypertension (OR, 95% CI): females (4,026, 2.373 to 6.828), age (1.081, 1.004 to 1.164), hypertensive mother (1.838, 1.027 to 3.289) and greater waist circumference (1.067, 1.035 to 1.100).

Conclusion: About a fifth of the students were considered to be in prehypertension group. Factors associated with prehypertension this study: male, older, mother with hypertension and increased waist circumference.

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Association with vascular function and exercise tolerance during cardiac rehabilitation after acute myocardial infarction.

A Ogawa,¹ K Shimizu,² K Terayama,¹ T Akiba,¹ T Yamamoto,³ T Nkagami,² H Kiyokawa,² H Maruoka,⁴ K Nakagawa¹ and K Shirai³

¹Sakura Medical Center, Department of Rehabilitation, Sakura-City, Chiba, Japan ²Sakura Medical Center, Department of Internal Medicine, Sakura-City, Chiba, Japan ³Sakura Medical Center, Department of Vascular Function, Sakura-City, Chiba, Japan ⁴Saitama Prefectural University, Graduate School of Health and Medical Welfare, Koshigaya-City, Saitama, Japan

Purpose: Aim of this study was to investigate the relationship between the vascular function and exercise capacity that shows prognostic factors of heart disease and mortality.

Methods: The subjects were patients who carried out Cardiac Rehabilitation (CR) after an emergency coronary angioplasty for acute myocardial infarction during August 2012 to September 2014. We measured the oxygen uptakes during Cardio Pulmonary Exercises Test (CPX) and Cardio-Ankle Vascular Index (CAVI) as the vascular elasticity function, Brain natriuretic peptide (BNP) as a

clinical biomarker and Ejection Fraction (EF) as a cardiac function. We calculated the degree of change Δ (12months – discharge) for each parameter, and we investigated the relevance of oxygen uptakes and other parameters. For the analysis, we used the Spearman rank correlation coefficient. A p value of ≤ 0.05 was considered statistically significant.

Results: Subjects were 11 patients (3 females and 8 males) with an average age of 63.2 ± 7.8 years old. Δ CAVI and Δ VdotO₂ showed an inverse correlation significantly ($P < 0.01$) and its correlation coefficient (r) is -0.764 and contribution ratio (r^2) is 0.358. Δ EF, Δ BNP and Δ VdotO₂ had no significant correlation.

Discussion: Relevance of the increase of CAVI and increase of oxygen uptake has been shown in CR after myocardial infarction. It is suggested that the improvement of the elastic vascular function contributes to the prognosis of myocardial infarction patients.

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Effect of planned discharge program applied on patients with coronary artery bypass surgery on decreasing complications and unintended return back to the hospital

B Ozen,¹ UMIT Sevig¹ and HILMI Tokmakoglu²

¹Erciyes University, Health Science Faculty, Community Health Nursing, Kayseri, Turkey ²Mevlana University Faculty of Medicine, cardiac and vascular surgery, Konya, Turkey

This experimental study was conducted to evaluate the effect of planned discharge program (including discharge education, consultation with phone and home visit) applied on patients with coronary artery bypass surgery on decreasing complications and unintended return back to the hospital. Study was conducted with totally 48 subjects being in intervention group ($n = 24$) who were consistent with the criteria and in control group ($n = 24$). Data were collected by the researcher with Patient Details Form, Form for Risk Factors Related with Coronary Artery Disease and Surgery/Hospital Life of the Patients, Monitorization Form of Consulting with Phone, Form for Characteristics Related with Unintended Application to Hospital, Control Form of Home Visit. Patients were evaluated by planned discharge program. Approval from ethical committee and written informed consent from the patients were obtained. Chi-square and Mc-Nemar tests were used for statistical analysis.

Patients who were applied planned discharge program were found to make right applications in terms of breathing exercises, bathing and surgical wound care, nutrition, exercising and resting, sexual life, coping with stress, using surgical stocking, excretion, smoking, limiting visitors and adaptation to home. Almost all of them had normal physical examination findings such as systolic and

diastolic blood pressure, pulse, fever, bowel sound edema, localization of wound of sternum and removed vessel, use of triflow and lung sound and they did not live complications such as persistent pain despite resting and sublingual pills, palpitation with shortness of breath, persistent shortness of breath despite resting, increase in body weight of more than 1–1.5 kg per day, body temperature more than 38.0°C and inflammatory flow, flushing and swell in incision area ($p < 0.001$). Three patients in the intervention group returned back to the hospital for 2 times staying for 1.5 days at the hospital and they did not return back for the second time. In the control group, 22 patients for the first time and 5 patients for the second time returned back to the hospital and stayed at hospital for two days and one day, respectively.

Results of the present study demonstrate that planned discharge program applied on patients with coronary artery bypass surgery was efficient in right management of post – surgical care, preventing complications and returns back to the hospital. Therefore, planned discharge educations at hospital, consultation with phone after discharge and home visits are recommended to be included among nursing implications.

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Disrupted link between the autonomic nervous system and the heart in ARVC/D as expressed by symbolic dynamics

I Vranic¹ and I Vranic²¹University Clinical Center of Serbia, Clinic for cardiosurgery, Belgrade, Serbia²Specialized Hospital for Heart diseases Hertz, Belgrade, Serbia

Purpose: The autonomic nervous system controls all the visceral organs and their functions, receiving information indirectly through neuromodulators of their state. Experimental models that are system-oriented suggest that HRV is an important indicator of physiological stability of the body. Having in mind the idea that the heart decreases diastolic function in ARVC/D patients, we wanted to examine existing SyD and potential opportunities in the forecasting capabilities of such method.

Methods: The variability in heart rate is obtained by special software for analyzing Holter ECG. Out of 35 ARVC/D newly diagnosed patients, who were selected by innovative software at early stage, we enrolled those who had normal late potentials total 28 (80%) in the study. Control group consisted of 48 healthy subjects. Our developed software is PCT patented tool for detecting the risk of sudden cardiac death with 100% sensitivity and 90% specificity in general population. Statistical analysis was done using Chi square, followed by Mc Nemar's test.

Results: Patients with ARVC/D lose touch with ANS over time due to interspersed fat and fibrosis of right chamber

and the abrupt changes in afterload between left and right chamber that yield accelerated heart rate, provoking premature beats of RBBB type and later various dysrhythmias of RV origin. Our results presented in table below show that SyD has potential to disclose such future events.

Conclusion: Complex rhythm fluctuations in ARVC/D patients show distinct pattern. Symbolic dynamics have potential to foretell risk of such events by analyzing disharmonic communication between autonomic nervous system and the heart. The ability to forecast means being able to prevent SCD in ARVC/D patients.

Table 1. SyD in ARVC/D to predict SCD.

	ARVC/D LP positive	ARVC/D LP negative	Control group
Sym Dyn EN	4.17 ± 0.35*	4.22 ± 0.37*	3.15 ± 0.32
Sym Dyn FW	47.88 ± 16.9**	48.12 ± 16.77**	65.3 ± 8.2
HF (ms)	23 ± 11**	5.4 ± 3.7	5.6 ± 3.2

Legend: $p < 0.1$ * $p < 0.01$ **

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MPV levels in the presence of angiographically documented Peripheral Artery Disease

F O Arican Ozluk,¹ I Ber,¹ T Peker,¹ M Yilmaz,¹ E Tenekecioglu,¹ K Karaagac¹ and F Vatansver¹¹Yuksekk Ihtisas Hospital, Bursa, Turkey

Objective: The prevalence of PAD increases progressively in all over the world. In the previous studies, increased mean platelet volume (MPV) levels have been shown to be associated with peripheral artery disease. However, non-invasive methods in the diagnosis of peripheral arterial disease in these studies was used. In the literature, there is no studies examining the values of MPV in the angiographically documented peripheral artery disease. We aimed to evaluate the relationship between angiographically documented peripheral artery disease and MPV levels in the peripheral blood samples.

Methods: In this study, retrospective analysis of 1386 patients was performed who underwent peripheral angiography at the cardiology service of the our hospital, between 2006 and 2012 for a suspected diagnosis of lower extremity peripheral arterial disease. Patients with a stenosis percent of 50% or above in the peripheral angiography were considered as having occluded peripheral arterial disease. Peripheral arterial disease was newly diagnosed in this study patients. MPV values are affected by many factors, because of this our study inclusion criteria were kept broad. Only eighty-four patients who complied with

the inclusion criteria were detected. The study patients were divided into 2 groups according to the results of peripheral angiography. 56 patients diagnosed with peripheral arterial disease based on the specified criteria were grouped into Group I (mean age 59 ± 10 years) while 28 patients without peripheral arterial disease were grouped into Group II (mean age 60 ± 11 years). Blood tests and angiographic images were analyzed from patients data. Blood tests measured on the day of peripheral angiography were evaluated.

Results: Group I had a significantly higher rate of coronary risk factors as hypertension, coronary artery disease, and smoking habit ($p < 0,05$). Both groups were also similar in terms of basic parameters of anemia including hemoglobin, hematocrit and red cell distribution width levels. There were no significant differences between MPV levels of both groups ($p > 0,05$).

Conclusions: In our study, we did not find any significant increase in the MPV levels of patients in whom the presence of peripheral arterial disease was demonstrated angiographically. The use of MPV level as a risk factor for peripheral arterial disease is impractical due to the fact that MPV is affected by a lot of factors and there are several technical factors. Because of this, in the real life, we are not recommend to use MPV values as a indicator for peripheral artery disease.

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Risk for cardiovascular diseases and depressive disorder in systemic lupus erythematosus.

A Soroceanu,¹ M Mazur,¹ S Soroceanu,¹ L Grib,¹ M Mazur-Nicoric¹ and V Lisnic¹

¹State University of Medicine and Pharmacy, cardiology, Chisinau, Moldova, Republic of

Background: Depression and cardiovascular disease are common and debilitating comorbidities among the general population. Despite considerable evidence linking cardiovascular disease and risk factors to depression, these studies have not assessed the relationship in systemic lupus erythematosus (SLE). Objective of this study was to evaluate depression as a cardiovascular risk factor in patients with SLE.

Methods: We examined 73 consecutive patients with SLE who met ACR criteria in 1997. Age limits ranged from 18 to 69 years, mean age was 32.05 ± 1.3 years. Depressive syndrome was evaluated by Hamilton Rating Scale for Depression (HRSD). Disease activity index was assessed by SLEDAI. Assessment of intima-media thickness (GIM) was detected by ultrasound examination of carotid artery. Lipid spectrum was calculated by Friedewald formula.

Results: During the study identified 47 (55,9%) cases of depression where HRSD > 7. Depression was severe

(HRSD > 25) in 2 (2,4%) patients. Thickness of the GIM was established at 13 (36.1%) patients, ranging from 0,62-1,3 mm in patients with depression. Among 47 patients with SLE and depression were detected 36 (42,8%) patients with cardiovascular diseases. SLEDAI index values ranged from 4 to 44 points (mean $20,03 \pm 9.2$). Quality of life in patients with depression showed low score (mean 38 ± 5.59) linked to mental health.

Conclusions: Our findings show an increased prevalence of depression in SLE patients. The use of HRSD for neuropsychiatric evaluations is utility tool for diagnosis in early affection. Application of SF-36 questionnaire in patients with systemic lupus erythematosus showed that low quality of life is determined by depressive syndrome, primarily though mental health damage. Depression has been associated with high activity and cardiovascular disease in LES.

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Bronchial hygiene techniques in acute respiratory diseases

MD Deucht,¹ IS Sundov² and AK Kraljevic³

¹University hospital Dubrava, department of cardiac surgery, Zagreb, Croatia
²Philips, Sleep and Respiratory Care, Eindhoven, Netherlands
³University Hospital Centre Zagreb, department of cardiology, Zagreb, Croatia

Objective: The aim of this lecture is to present the pathophysiology of mucociliary clearance as a natural “weapon” in the fight against respiratory infections. This lecture will focus on the mechanisms of natural cleansing of the respiratory tract, mucociliary transport and cough. Diseases that cause excessive build up of secretions or airway obstruction will also be named. How to evaluate a patient? Which technique to choose to monitor the therapy? These questions will all be addressed in this introductory lecture.

Methods: Considering the basis of all cardiopulmonary problems, it is necessary to determine the cause of respiratory complications to ensure that the chosen manipulation technique is effective, safe and efficient for the patient in the shortest time possible. Risk factors that have to be taken into account are the diagnosis, surgical procedure (in case of one), hemodynamic parameters, patient age and associated diseases.

Results: Based on the patient’s status and test results it is necessary to chose the best, safest and most efficient technique of relieving the patient of bronchial secretions and improving his lung function.

Applying manual techniques, vibrations, percussion, huff cough, abdominal thrust, drainage positions and other efficient coughing and breathing techniques, with the help and support of appropriate device (mechanical in/exsufflator). Respiratory therapy as a non-pharmacological treatment,

will certainly have an enviable effect in a patient's healing and therapy process.

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Familial Hypercholesterolemia identification in children; a tool to assess the success of a nationwide FH cascade program.

JMH Galema-Boers,¹ J Versmissen,¹ M Williams² and J Roeters Van Lennepe¹

¹Erasmus Medical Center, Dpt Internal Medicine, Div. of Pharmacology, Vascular & Metabolic Diseases, Rotterdam, Netherlands ²Erasmus Medical Center, Pediatrics, Vascular & Metabolic Diseases, Rotterdam, Netherlands

Purpose: Familial hypercholesterolemia (FH) is an autosomal dominant disorder caused by mutations in the low density lipoprotein (LDL) receptor gene, resulting in raised plasma LDL cholesterol from birth onwards. Early treatment with statins can prevent premature coronary heart disease (CHD).

Cascade screening in the Netherlands aims to identify FH. This study was designed to identify whether children with FH were identified through family screening or due to CHD in one of the parents as a tool to assess the successfulness of the screening. Furthermore we determined whether screening had detected all ethnicities at comparable rates.

Methods: A single centre cross sectional study including all consecutive children with heterozygous FH with a known genetic mutation visiting the outpatient clinic of a university hospital in The Netherlands.

Results: We analyzed 288 children (150 girls) from 204 parents. Most children (58%) inherited FH from their father. The majority was of Dutch origin (93%) while the general Dutch population consist of 21% immigrants. The average age at first visit to the lipid clinic was 10.6 ± 4.3 years (± SD), and untreated total cholesterol 7.2 ± 1.5 mmol/l. A history of premature CHD was present in 18% of the parents; 27% of the fathers and 7% of the mothers. Children with a parent without CHD (82%) visit the lipid clinic for the first time at a younger age than children with a parent with CHD (10.5 vs 11.6 years), but they started statin treatment a half year later (14.2 vs 13.7 years).

Conclusion: Most of the children visiting the lipid clinic don't have a parent with CHD. These children are younger and started their treatment a half year later than the children with a parent with CHD. The fact that CHD is still a presenting event of FH in especially fathers shows that nationwide screening might have been terminated too early. The underrepresentation of non-Dutch ethnicities supports this conclusion.

Service development and innovation

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With the patient not just for the patient: the development of a digital home-based cardiac rehabilitation programme

C Deighan,¹ C Pagliari,² J Elliott¹ and L Taylor¹

¹The Heart Manual, NHS Lothian, Edinburgh, United Kingdom ²University of Edinburgh, Edinburgh, United Kingdom

Purpose: To develop with patients and health professionals, a digital version of the UK's leading home-based cardiac rehabilitation programme. The original paper resource has a strong evidence base and is an excellent example of a facilitated, sustainable and comprehensive programme used by multi-disciplinary teams throughout the UK and internationally. Key aims are to: improve access of rehabilitation services to younger people diagnosed with myocardial infarction or undergoing revascularisation; provide greater support for people returning to work, providing opportunities to integrate the programme into working life earlier after a heart attack or revascularisation, engage with the greater number of people using digital technology in day to day living and provide patients and health professionals with more flexibility in intervention engagement and delivery.

Methods: The new digital prototype was constructed with input from team of nurses, psychologists, web developers, with further refinement invited from ehealth experts and patient graduates of the original home-based programme and other traditional hospital based programmes. Using an iterative process and employing mixed methods we have used questionnaire, interviews and formed focus groups to elicit points of view from professional facilitators and service users on the effectiveness of content, clarity of layout and ease of use of the online resource and suggestions for further improvement.

Results: The initial evaluation has highlighted the perceived effectiveness of the new format at communicating the key messages of the programme and flagged several areas of development such as incorporating features to aid partially sighted patients and the sharing of inputs with general practitioners. Such areas are now under further refinement. Other outcomes related to the development process namely the collaboration of patient reviewers has prompted the formation of a more established patient engagement group that can be actively part of future service developments.

Conclusion: Engaging the patient as well as the health professional in the creative process of intervention development and refinement can be a mutually productive experience and leading to a better matched intervention in the future. This is consistent with the Patient Rights Act in the UK to give the public a greater voice

on their experiences and develop more patient-centred health and care services.

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Frailty scoring in transcatheter aortic valve replacement (TAVR) are we using the correct frailty assessment tools?

L Hinterbuchner¹

¹Salzburg Clinic, Salzburg, Austria

Background: Transcatheter Aortic Valve Replacement (TAVR) is currently the form of treatment for patients that are deemed too high a risk for Surgical Aortic Valve Replacement (SAVR). TAVR is a less invasive treatment, yet the overall 1 year mortality in the older patients is 24 %. (Seiffert, et al., 2014) The selection for suitable patients remains a challenge as the heart team really needs to assess, which patients will have at least a 2 year benefit (> quality of life QOL) from the TAVR procedure. Evaluation of frailty in this patient group has been recommended. There is no agreed upon definition of frailty and how it should be measured in the TAVR patient care pathway.

Aim: To review and evaluate the frailty assessment tools currently being used in TAVR assessment that has been used in current research papers.

Methods: Using a literature search involving data base search engines from CINAHL, PubMed, SAGE publications and European Society of Cardiology. The Inclusion criteria that needed to be met, were studies that actually used a frailty evaluation tool to measure frailty in the TAVR risk assessment. A critical evaluation of the literature was done.

Results: There is a large discrepancy in the tools being used amongst researchers and TAVR centers. Some of the tools used in the studies have not been validated in this patient group.

Conclusion: In the search for a good frailty risk score for use in TAVR evaluation one should start by using a frailty assessment tool recommended by the geriatric experts in the consensus statement from Morley et al., 2013. The Frailty assessments tools should be validated for risk scoring in TAVR before they are used as evidence in this patient group.

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Implementation of cardiology guidelines in the emergency department

J Byrne¹

¹Mater Hospital, Belfast Health and Social Care Trust, Belfast, United Kingdom

Introduction: Dissemination of evidence based guidelines and communication of changes in practice can be challenging in any speciality. However, many patients with serious cardiac illness present via the Emergency Department (ED), along with many other categories of patient with life-threatening illness. Practitioners in this challenging environment have to keep themselves updated with so many different guidelines that sometimes omissions or variations occur in patient management. We noted variations in patient care for patients presenting with ST elevation Myocardial Infarction (STEMI), non ST elevation Myocardial Infarction (NSTEMI) and unstable angina.

Methods: A Project Nurse post was created for a 6 month period to address inconsistencies in care, and to disseminate and implement evidence based guidelines for cardiology patients in the ED. The initial targets we decided to address were time to ECG (target <10 minutes from arrival) and door-to-needle time for STEMI (target <30 minutes from arrival in the ED). All potential areas of delay were identified and baseline audit carried out. Results were fed back to ED stakeholders and discussions took place on how delays could be minimised. Small changes which were thought to impact on delays were put in place, continuous audit was carried out by the project nurse and results fed back to the ED team.

Results: After 1 year, with engagement of the whole ED team, the door to needle time for STEMI had improved from 33% achieved in less than 30 minutes to 71% in less than 30 minutes. We had equal success in reducing the time taken to record an ECG from arrival. Monthly audit is undertaken and we have achieved 80% in less than 10 minutes, with a consequent positive effect on door to balloon times now that the chosen treatment for STEMI is Primary Percutaneous Coronary Intervention (PPCI) where we saw a 29 minute reduction in time to reperfusion for self-presenters.

Conclusion: The 6 month secondment became a permanent post, as having a cardiology nurse in the ED was clearly beneficial in terms of cascading, implementing and evaluation of cardiology guidelines within the ED. The Chest Pain Nurse Practitioner takes the lead in dissemination of any changes in practice and feeds back to the ED and cardiology teams. In this way, issues can be flagged up and good practice celebrated.

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A comparison of patient experience of attending a nurse led clinic versus a cardiologist led clinic.

N Dent,¹ N Mackay,¹ S Niranjani,¹ A Pottle,¹ L Priestley-Barnham¹ and T Kabir¹

¹Royal Brompton and Harefield NHS Foundation Trust, Cardiology, Middlesex, United Kingdom

Background: The nurse led post PCI clinic at this Trust was initiated in 2001. All patients undergoing primary, emergency or elective PCI are followed up here. Either a Clinical Nurse Specialist (CNS) in Cardiology or the Nurse Consultant reviews the patients attending these clinics. The clinic runs parallel to the Cardiology Clinic to enable clinical supervision of the CNS as required. For several years, a biannual audit on the patient's experience of the nurse led clinic has been performed. However, in order to ascertain if care was comparable to the cardiologist led clinic, an additional audit was carried out to examine any differences.

Methods: A simple questionnaire, that was based on the one already in use for auditing the nurse led clinic, was employed to ascertain the patient satisfaction of both clinics. The intention was to provide not only a comparison of both services at local level, but inform and guide future service design. Questionnaires were handed out to patients as they left the clinic. A free post envelope was provided for ease of return and all questionnaires remained anonymous.

Questions included:-

Did you feel the doctor/nurse was approachable? Was there enough time to discuss any concerns that you had? Did you feel the doctor/nurse had enough knowledge to answer any questions you had? Were you satisfied with your experience? Was the time of the clinic appointment suitable for you? Are you working? If an 'out of hours' appointment was available, would this be useful to you?

Results: Throughout March and April 2014, a total of 335 patients were seen in the cardiologist's clinic. 77 questionnaires were given out (22.9%). 41 patients responded, giving a response rate of 53.24%. 113 patients attended the CNS clinic and 111 (83.46%) were given a questionnaire. 61 (60.3%) of patients responded

100% patients thought the nurse was approachable compared to 95.12% for the medical staff. 93.44% thought the nurse had enough knowledge to answer their questions compared to 90.24% for the medical staff. 95.08% of patients seeing the nurses were satisfied with their experience compared to 90.24% for the medical staff. 60% of the respondents in the nurse led clinic would like an out of hours service compared to 39.02% in the cardiologist led clinic

Conclusion: Specialist nurses can provide a post angioplasty clinic service which is equal to and possibly better than a cardiologist led clinic. Patient experience of attend-

ing a nurse led post PCI clinic is good. The nurse led model could be extended to other groups of cardiology patients

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Changing practice and improving nursing job satisfaction in acute cardiac care

S Piskor,¹ D Grguric,¹ J Skrlin,¹ M Stanic,¹ V Seb,¹ I Ivanicek,¹ A Josipovic,¹ V Miler¹ and B Hrzic¹

¹University Hospital Dubrava, Zagreb, Croatia

Background: The current nursing shortage and high turnover is often a problem in many hospitals and is related to job satisfaction and motivation.

Aim: The purpose of this study was to investigate if motivation and job satisfaction of nurses are related to work safety, implementing intravenous access guidelines for peripheral venous access; and the guidelines for the prevention of intravascular catheter-related infections.

Methods: A pre-post design was used to administer a questionnaire regarding nurse satisfaction (personally made), and a questionnaire regarding intravenous access installment and maintenance ("The Infusion Nurse and Patient Complication Rates of Peripheral - Short Catheters, Journal of Intravenous Nursing, vol. 24, no.2, March/April 2001:113-123"; "Policies and Procedures for Infusion Nursing. 3rd edition. Norwood: Infusion Nursing Society. 2006."), and a checklist for the practitioners who insert central venous catheters and the persons responsible for the surveillance and control (Center for Disease Control, 1996).

Results: After implementing a series of measures to develop nursing practice in peripheral intravenous and central venous access from October 2010 - May 2014, we found a decrease in complication rates related to vascular access. Nurses also expressed improved levels of job satisfaction, stated that they took pride in improved safety and had higher levels of motivation.

Conclusion: The study found a strong positive relationship between improvements in patient treatment, guideline implementation, decrease in catheter-related blood stream injuries (CBRSI), safe working environment and job satisfaction and motivation. It is possible that the Hawthorne Effect may have had an influence on these findings, but that with standing we have demonstrated the positive benefits to staff motivation and job satisfaction from implementing a programme of practice development within high dependency cardiac unit.

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