P45: EFFECT OF EXTRACTION METHODS ON MORPHOLOGICAL CHARACTERS AND PROTEIN PROFILE OF OUTER MEMBRANE VESICLE (OMV) OF SHIGELLA SONNEI

Samane Sarvary[1], Seyed Latif Mousavi Gargari[1]

1. Shahed University, Tehran,Iran

Background and Aim: Shigellosis or bacillary dysentery caused by Shigella, represents a significant public health problem in developed and developing countries predominantly in children under the age of 5 years. Vaccination appears to be the only rational prophylactic approach to control shigellosis. Unfortunately, there is still no safe and efficacious vaccine available. Vaccinescontaining Outer membrane vesicles (OMVs) can be introduced as a new candidate for shigellosis prevention. OMVs are spherical blebs of average diameter 10–300 nm that are naturally released from Gram negative bacteria into the environment. OMV produced by pathogenic bacteria are significantly immunogens and appeared to be safe when used as vaccine.

Methods: In this study we extracted OMVs from *Shigella sonnei* by two different methods: In one method the culture media containing bacteria was first concentrated by freeze-dryer and then natural OMVs released from bacteria in the log phase was sediment by centrifugation. In another method, for better release of OMVs, the bacteria were first treated with detergent and then collected by centrifugation.

Results: Transmission electron microscopy (TEM) assay showed considerable differences in size homogeneity and membrane integrity.

Conclusion: Significant difference on the protein profile and protein concentrations was observed on SDS-PAGE analysis of two different OMVs. The two OMVs will be studied for their efficiency of vaccine candidate in the mice model.

Keywords: Vaccine, OMV, shigellosis