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The effect of Saliva Officinalis on Malondialdehyde level of brain tissue in streptozotocin induced diabetic rats

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Background and Objevtives: Diabetes type one (mellitus) is accompanied with enhanced oxidative stress and lipid peroxidation. One of the most markers of lipid peroxidation is tissue level of malondialdehyde (MDA). Due to significant role of enhanced oxidative stress in development of cerebral damage in diabetics and anti-oxidative effect of SO mentioned in traditional medicine references, this study was designed to evaluate the effect of chronicadministration of SOon MDAlevel ofbrain tissue in diabetic male rats.

Materials and Methods: In this Experimental study, 32 male wistar rats, weighted 250-300 g, divided randomly into 4 groups: healthy control, healthy under treatment with SO, diabetic control, diabetic under treatment with SO. Diabetes mellitus was induced by inter-peritoneal injection of Streptozocin (60mg/kg). Groups under treatment received food containing 6.25% of SO. Blood samples were obtained six weeks after the injection. Then the rats were anesthetized, brains were removed by opening the skull, then homogenized with normal saline and level of MDA according to TBARS method were measured by spectrophotometer. Data was analyzed with one-way ANOVA and Tukey post-test.

Findings: Serum glucose level in diabetic rats showed a significant increase compared to healthy groups ($P < 0.05$). A significant increase in brain tissue level of MDA in diabetic rats were observed ($P<0.05$). SOtreatment had desirable but non-significant reduce in tissue level ofMDA compared diabetic group ($P>0.05$).

Conclusion: Our study demonstrates that long term medication with SOin rats with diabetes mellitus causes desirable andlow reduce in oxidative stress of brain tissue of diabetic rats and probably reduce effect of diabetes mellitus on nervous system.

Keywords: Saliva officinalis (SO); Malondialdehyde (MDA); Diabetic male rats; Brain tissue