

Joint Event

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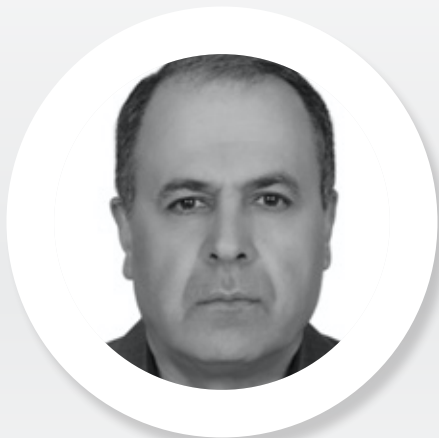
Safranal ameliorates glomerulopathy in experimentally induced diabetic rats

Nephropathy is one of the major complications of diabetes. Many drugs are used to manage diabetes outcome. Insulin is used routinely in treatment of diabetes. Pharmacological evidences have suggested anti-oxidant, anti-inflammatory, anti-aging and anti-cancer activities of safranal. This investigation was design to study the effects of safranal on diabetic glomerulopathy in rats. Insulin, as an anti-diabetic drug, was used to compare results: Diabetes was induced by intraperitoneal injection of streptozotocin (55 mg/kg) dissolved in sodium citrate buffer (0.1 M, pH 4.5). After confirmation of diabetes (blood glucose level >250 mg/kg), treatments with intraperitoneal injections of normal saline (control), safranal (0.025, 0.1 and 0.4 mg/kg) and insulin (5 IU/kg) were started and continued for six weeks. On 42nd day, animals were euthanized, and kidney tissues were collected fixed and processed routinely and 5-7 μ m sections were prepared and stained with H&E, PAS and Masson's trichrome and were subjected to semi-quantification analysis. The glomerular changes in diabetic group were thickening and splitting of glomerular basement membrane, expansion of mesangial matrix, mesangiolytic, hyperplasia and fibrosis. Safranal at a dose of 0.025 mg/kg did not have significant effects on any of the lesions, and at a dose of 0.1 mg/kg showed significant effects only on mesangiolytic and hyperplasia. Safranal (0.4 mg/kg) and insulin (5 IU/kg) produced similar improving effects by amelioration of all glomerular histopathological changes. Safranal, as a biologically active substance of saffron, and insulin, a synthetic anti-diabetic drug produces similar tissue protective effects on diabetic glomerulopathy. It is recommended that safranal can be considered for diabetes management.

Biography

Amir Abbas Farshid is a Professor of Veterinary Pathology, Faculty of Veterinary Medicine, as well as the Head of Electron Microscope Center, Urmia University, Urmia, Iran. He is the Head of Department of Pathology, Faculty of Veterinary Medicine, Urmia University (1994-2003). He has published more than 86 research papers in reputed journals. He has presented 39 research papers in conferences. He was honored with Dr. Ganti A Sastry Award for the best article of the year 1996, Indian Veterinary Journal. His research areas of interest are Neuropathology, Nephropathology and Diabetes.

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