

عنوان مقاله:

Comparison of the anti-diabetic and nephroprotective activity of vitamin E metformin and Nigella sativa oil on kidney in experimental diabetic rats

محل انتشار:

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خلاصه مقاله:

Objective(s): In this study, we aimed to evaluate and compare the nephroprotective and possible anti-diabetic effects of vitamin E, metformin, and Nigella sativa. Materials and Methods: Thirty male Wistar Albino rats were randomly divided into control, experimental diabetes (DM), vitamin E + DM, Metformin + DM, and N. sativa + DM. For experimental diabetes induction, IP ۴۵ mg/kg streptozotocin was administered. Rats in vitamin E + DM, Metformin + DM, and N. sativa + DM received ۱۰۰ mg/kg vitamin E, ۱۰۰ mg/kg metformin, and ۲.۵ ml/kg N. sativa oil for ۵۶ days. After the experiment, all animals were sacrificed, and blood and kidney samples were collected. Results: The blood urea level of the DM group was significantly higher ($P < 0.01$) than the control group. Urea levels in vitamin E, metformin, and N. sativa groups were similar to the control group ($P > 0.05$) but significantly different from the DM group ($P < 0.01$). Bax, caspase-۳, and caspase-۹ immunopositivity intensity were quite low in the control group, and similar to the N. sativa group ($P > 0.05$). Bcl-۲ immunopositivity density was highest in the N. sativa group, similar to the control group in terms of percentile area ($P > 0.05$). Conclusion: When all three treatment methods were compared in terms of their effectiveness in alleviating DM and DN, it was determined that the most successful result was obtained with N. sativa oil.

کلمات کلیدی:

Apoptosis, Diabetes Mellitus, Kidney, Metformin, Nigella Sativa, Vitamin E

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