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The effects of Nigella sativa oil on kidney nephron structure NMRI mice treated with high dose of silver nanoparticles

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Abstract

Today, with the increasing use of silver nanoparticles in consumer products and medical products, including serious concerns have been expressed about the potential risks of nano-silver particles, the goal of this study was to evaluate the protective effects of Nigella sativa oil (NSO) as a potent antioxidant on changes histological kidney tissue and blood biochemical parameters in rats treated with high dose of silver nanoparticles (AgNPs), respectively. 24 adult male rats (NMRI) with an average weight of 25 to 30 g were randomly assigned to 4 groups of 6 rats including the control group, AgNPs (mg / kg / day500), NSO (ml / kg / day 5) and AgNPs + NSO split and both were treated orally for 35 days. At the end of the treatment period, mice, anatomy, left kidney removed, fix, molding, cutting and tissue processing was carried out using -Zan Han Hayden were stained. Renal tissue was evaluated parameters stereologically. Serum samples were analyzed. ANOVA and Tukey test to evaluate the study data. The differences in the extent (05/0 P <) were considered significant.

In this study, a significant increase in mean total volume of renal corpuscle, glomeruli, Taft, Bowman's capsule membrane and a significant reduction in the volume of the entire space of Bowman's capsule AgNPs group compared to the control group. Malvndy¬Ldyyd rate and serum urea AgNPs compared to the control group showed a significant increase (05 / 0P <) the parameters listed in Group AgNPs + NSO in the control group was normal.

Keywords: Biochemical parameters, Black oil seeds, Kidney, Mice, Silver, Stereology