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Original article

Royal jelly protection on flunixin meglumine-induced spermiotoxicity and testicular degeneration in mice

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Abstract

Current study was designed to investigate the protective effects of royal jelly on Flunixin meglumine (FM)-induced spermiotoxicity related to sperm concentration, abnormal spermatozoa count and histopathological changes in mice testis. The subjects were divided into five groups according to FM and/or royal jelly intake: Control group; group 1, FM alone (25 mg/kg, im); group 2, combination of FM (25 mg/kg, im) and royal jelly (200 mg/kg, oral); group 3, FM alone (50 mg/kg, im); and group 4, combination of FM (50 mg/kg, im) and royal jelly (200 mg/kg, oral). The animals were fed once daily for 15 days and they were sacrificed last day. Epididymal sperm concentration and abnormal spermatozoa count were noted. Testicular histological findings were evaluated. On purpose, organization of each animal was graded according to Johnsen's scoring to assess the spermatogenesis relying on seminiferous tubule cross-section scores. Comparing to controls, FM administration caused a decrease in sperm concentration ($p < 0.05$), an increase in total abnormal spermatozoa rates ($p < 0.05$) and more degenerative changes in testes in mice.

Royal jelly supplementation ameliorated both sperm concentration and abnormal spermatozoa ($p < 0.05$) comparing to the control group. In conclusion, we suggested that royal jelly might have protective effects in the FM-induced reductions in epididymal sperm concentration and increase in abnormal spermatozoa rate.

Key words: flunixin meglumine, royal jelly, male mice, sperm, testes toxicity