

Effect of turmeric oil in reproductive efficiency of immature male rats exposed experimentally to oxidative stress induced by potassium dichromate.

ABSTRACT

This study was conducted to evaluate the pre-puberty effects (period I) and post-puberty damage (period II) of K₂Cr₂O₇ and TO on reproductive efficiency of immature male rats. 48 male Albino rats aged 25 day, randomly divided into 4 groups, 12 rats in each. 1stG, received 0.1 ml of DMSO 5% solution I/P, 2ndG, received K₂Cr₂O₇ (0.4 mg/kg I/P) dissolved in distilled water, 3rdG received TO dissolve in DMSO 5% (20 mg/kg I/P), 4thG received both K₂Cr₂O₇ + TO (0.4 mg/kg + 20 mg/kg I/P, ½ h in between). At the end of the experiment, half number (6) of the animals were sacrificed which represent period I (period of treatment, 14 days), the other remaining (6) animals kept on standard food without treatment to the age of 100 day which considered period II (period of recovery). Treatment with K₂Cr₂O₇ (period I) show significant decrease in serum GSH and thickness of seminiferous tubules epithelium with significant increase in serum MDA, while TO treatment revealed significant increase in serum GSH and thickness of seminiferous tubules epithelium with significant decrease in serum MDA furthermore, treatment with K₂Cr₂O₇ and TO together show significant increase in seminiferous tubules epithelium thickness and serum GSH, with significant decrease in serum MDA. In period II rats exhibited significant improvement in the parameters under the study. In conclusion, K₂Cr₂O₇ have harm effects on reproductive efficiency of immature male rats while TO have improvement effects.

Keyword: Turmeric oil; Potassium dichromate; Reproductive Efficiency; Immature male rats.