Summary of the DVM thesis No. 6114, Faculty of Veterinary Medicine, Urmia University .

The academic year: 2022-2023

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Title of thesis: Effects of Catechin on Testicular Tissue and Epididymal Sperms Following Ketamine Toxicity in Mature Male Mice

Summary:

Although ketamine (KET) is an important medicine in anesthesia and pain management, there is a growing concern regarding its toxic effects. In line with that, the present study was conducted to shed light on the effects of catechin (CAT) on testicular tissue and epididymal sperms following ketamine toxicity in mature male mice. Thirty-six adult male mice were categorized into six equal groups including non-treated control group, sham group receiving normal saline (0.10 mL) intra-peritoneally (IP) and orally (PO) for 14 days, KET group receiving KET (50 mg/kg/day; IP) for 14 days, KET/$CAT_{12.5}$ group receiving KET (50 mg/kg/day; IP) plus CAT (12.5 mg/kg/day; PO) for 14 days, KET/CAT_{25} group receiving KET (50 mg/kg/day; IP) plus CAT (25 mg/kg/day; PO) for 14 days and KET/CAT_{50} group receiving KET (50 mg/kg/day; IP) plus CAT (50 mg/kg/day; PO) for 14 days. Then, testicular histo-architecture and anti-oxidant/oxidant status (AOS) as well as epididymal sperms characteristics were studied at the end of experimental period. The CAT administration led to significant promotion in testicular histological indices and AOS in a dose-dependent manner compared to KET group. Further, CAT at the highest studied dosage (50 mg/kg) caused significant improvements in epididymal sperms characteristics compared to KET group. These findings demonstrate that CAT is able to potentially exert repro-protective activities against KET-induced reproductive toxicity in male mice.

Keywords: Catechin; Ketamine; Mice; Sperm; Testis