Original Paper

Effect of 3,4-methylenedioxymethamphetamine on pituitary-gonadal hormonized axis in immature male Rats

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Abstract

Background and Objective: In recent years, 3,4-methylenedioxymethamphetamine (MDMA) consumption is prevalent among young people. It has adverse effects on central neural system and other organs. This study was done to determine the effect of MDMA on pituitary-gonadal hormonized axis in immature male rats.

Materials and Methods: In this experimental study 35 immature male Wistar rats with approximate weight of 90±10 gr, age range of 40-45 days were allocated in five (n=7) including experimental I, II, III, control, and shem groups. Animals in the experimental I, II, III have received 2, 4 and 8 mg/kg bw of MDMA intraperitoneally after 14 days, respectively. Animals have received saline normal in shem group while the controls did not receive any substance. The blood samples and testes have collected. The serum FSH, LH, and Testosterone concentrations and testes weight were determined. Data analyzed using ANOVA and Tukey tests.

Results: Testosterone hormone concentration significantly increased in experimental groups (4 and 8 mg/kg bw) in comparison with control and shem groups ($P<0.05$). Concentrations of FSH and LH in the experimental groups (2 and 4 mg/kg bw) significantly reduced in comparison with shem and control groups ($P<0.05$). Testes weight significantly reduced in experimental groups (4 and 8 mg/kg bw) compared to control and shem groups ($P<0.05$).

Conclusion: This study showed the MDMA has adverse effect on pituitary-gonadal axis and tests weight in immature male Wistar rats.

Keywords: 3,4-methylenedioxymethamphetamine, Testis, Testosterone, FSH, LH, Male Rat

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