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INTERACTION OF INTRAPERITONEAL SULPIRIDE WITH MORPHINE IN INDUCTION OF MALE INFERTILITY

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Background and Aim : Introduction & Objective: Male fertility depends on the proper function of a complex system of organs, appropriate secretion of gonadotrophins and local balance between androgen and other local hormones which are important for spermatogenesis. Harmful effects of morphine on male reproduction and fertility are well known. In the brain dopamine, as a neurotransmitter, plays an important role in controlling the endocrine system. It facilitates sexual behavior in different animal species. The presence of dopamine receptors in rat reproductive organs and other mammalian sperm has been identified. This indicates the role of dopamine in reproduction and fertility. Sulpiride is an antagonist of dopamine D2 receptors, which has clinical application. In this research, we investigated the effect of Blockade dopamine D2 receptors with sulpiride in order to investigate the effect of interaction with morphine.

Methods : Materials and Methods: A total of 48 adult male Wistar rats with a weight range of (220-320 g) were studied. In the first group, morphine (5 mg/kg) was injected intraperitoneally. The next groups, received Sulpiride (1-4mg/kg) alone and prior (20 min) to morphine (5 mg/kg). The control group received only saline (1 ml/kg). All rats were sacrificed a week after drug injection. Their testicles were collected for examination. LH, FSH and testosterone were measured in the serum samples of all rats.

Results : Results: Significant decreases in dimensions of testicles were observed only in group receiving sulpiride prior to morphine (Compared to control group). Seminiferous tube destruction was observed in rats receiving morphine and high dosage of sulpiride. Seminiferous tubules in group that receiving sulpiride prior to morphine, were not degraded. Serum FSH and LH levels were not significantly different in any of the treated groups. Significant decrease of serum testosterone level was observed in rats receiving morphine and high dosage of sulpiride. Significant increase in serum testosterone level was observed in group receiving sulpiride prior to morphine.

Conclusion : Conclusion: It seems that Dopamine has an interacting effect with morphine on induction of male infertility and its mechanism is carried out through dopamine D2 receptors.

Keywords : sulpiride, infertility, morphine, rat