

Effects of Endosulfan on the Reproductive Parameters of Male Rats

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Abstract

Background: Endosulfan is an organochlorine compound with insecticidal and acaricidal properties and also with widespread agricultural use for insect control. The poison could enter the body through respiration, absorption via skin and ingestion in human beings, or grazing by farm animals. The long-term effects of endosulfan EC 35% on sex hormones and sperm morphology were studied in mature male rats.

Methods: In this study, 40 male rats were divided into five groups: the control group did not receive any substances while the placebo group received normal saline and the three test groups, respectively received endosulfan 5, 10 and 20 ml/kg of the total body weight every two days for three weeks. At the end of the experiment, the rats were anesthetized by chloroform and blood samples were collected from their heart for sex hormone evaluation. The rats were later sacrificed and their testes and epididymides were harvested for morphological studies of sperm.

Results: Following endosulfan administration, LH and FSH concentrations increased significantly ($p < 0.05$) while testosterone underwent a meaningful decrease. Moreover, reproductive parameters such as sperm count, motility and testicular weight decreased significantly compared to the control group ($p < 0.05$).

Conclusion: It seems that endosulfan has an undeniably damaging effect on the testis accompanied by its unfavorable effects on the reproductive system which may lead to infertility due to the changes in sex hormones concentration and sperm count and motility.

Keywords: Endosulfan, FSH, LH, Male infertility, Rat, Sex hormones, Sperm count, Sperm motility, Testosterone.

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