

## **Hormonal and sperm changes in rats treated with valproic acid**

The influence of valproic acid on murine fertility and offspring is well documented: VPA reduces the fertility rate (by 25%) and the number of fetuses. In addition, VPA causes behavioral alterations in rodents similar to the symptoms observed in autism.

General objective : To evaluate the effects of valproic acid on hormonal and sperm parameters in male Wistar rats.

Materials and methods: A total of 24 male Wistar rats weighing between 100 and 300 g were selected. We formed three batches comprising eight male Wistar rats each: (1) control batch having consumed distilled water, (2) batch having received 200 mg/kg of AVP, and (3) batch having received 400 mg/kg of AVP. The animals were treated for thirty days by gavage. At the end of the treatment, the animals in each group were anesthetized followed by blood sampling (retro orbital) and organs following dissection. Then directed towards an exploration of hormonal and sperm parameters.

Results : AVP significantly modifies the weight of the testicles, prostate, epididymis and spermiduct. The results show necrostermia with a significant difference in the batches treated with AVP at the respective doses. And also, the presence of asthenospermia and oligospermia in the batches treated at the respective doses. Our results reveal a significant decrease in testosterone levels and a non-significant decrease in FSH and LH.

Conclusion : Prolonged administration of AVP at doses of 200 and 400 mg/kg to male Wistar rats modifies the weight of the testes and the prostate, leading to a depletion of hormonal and sperm parameters.

Keywords : FSH; LH; Testosterone; Spermatic; Valproic acid; Fertility; Rat