

Alterations in the biochemical parameters and the spermatic function generated by obesity in rats

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Abstract

The aim of the present study was to assess the effects of a hyperlipidic diet set before puberty in male Wistar rats' gonadal weights and testicular functions. Males rats were used for the study, they were randomly distributed into 2 groups: Control Group (CG: standard diet (normolipidemic) and the second: Intervention Group (IG: hyperlipidemic diet), after 7 days of experimentation, 3 rats were sacrificed per week, blood samples were collected and level of HDL, LDL and triglyceride were analyzed. A significant reduction ($p < 0.05$) in testicular weight in the control group was observed compared with the hyperlipidic diet group, triglyceride levels showed a consistent change over the weeks of the study, HDL levels showed a consistent change during the 5 weeks of the study, Photomicrographie of the testicles of Wistar rats in the hyperlipid diet group for the first week showed Sertoli cell hyperplasia, during the second week microscopic examination showed significant testicular hypertrophy the microscopic examination during the fifth week showed hyperplasia of the seminal vesicle characterized by an increase in the number of glandular epithelial cells. The proliferating epithelium may form papillary structures with supporting stroma and with extension into the glandular lumen and total absence of sperm cells. Obesity is associated with many metabolic abnormalities. It has been found that these metabolic abnormalities induce disorders of spermatogenesis. Our results show that the hyperlipidic diet affects the gonads significantly with hypertrophic testes, the presence of hyperplastic seminiferous tubes, as well as a fine basement membrane.

Keywords: Wistar rat -Hyperlipidic diet – Testis – Fertility

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