

Effect of tocotrienol administration on reproductive efficiency and testicular tissue in obesity induced male rats

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ABSTRACT

Obesity is a major public health problem for all age groups across the world. Diet, rather than hereditary alterations, is thought to have a significant role in the obesity pandemic. Obesity can considerably harm male reproductive health, resulting in lower libido, erectile dysfunction, and subfertility or infertility. Tocotrienols (T3s) are among the compounds that have metabolic effects due to their nutritional properties as a food supplement. The study aimed to identify the role of tocotrienol in ameliorating the risks of a high-fat diet on some reproductive hormones and efficiency. The eighteen male adult rats were randomly assigned to three separate sets of six each. The control group was fed a low-fat diet (LF ten percent kcal from fat), the high-fat diet (HFD) group was fed a high-fat diet (HF sixty percent kcal from fat), and the high-fat diet with tocotrienol (HFDT) group was fed a high-fat diet administered tocotrienol (60 mg/kg BW) dissolved in olive oil (1 mL/kg) for 12 weeks. LH hormone showed a significant decrease in concentration for the HFD and HFDT groups when compared with the control group. Tocotrienol supplement introduced its ability to improve motility and account for dead and abnormal sperm values. The histopathological examination of testes in rats fed a high-fat diet and supplemented with tocotrienol revealed normal spermatogenesis. The tocotrienol supplement ameliorated the deleterious effect of obesity in the experiment and appeared significantly less than the control