

The Effect of Silymarin on Spermatogenesis Process in Rats

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Abstract

Free radicals and oxidation of germ cells in the testis tissue can reduce sperm levels and cause infertility in men. Silymarin is a compound with antioxidant effects. So, this study is aimed to evaluate the effects of Silymarin on spermatogenesis, tissue changes of testis and hypothalamic-pituitary-gonadal axis processes in rats. 40 adult male Wistar rats were prepared and divided into 5 groups including control, sham and experimental groups receiving silymarin. Blood samples were obtained and serum LH, FSH, GnRH and testosterone levels were measured. Testicular tissue sections were prepared and spermatogonia, primary and secondary spermatocytes, spermatids, spermatozooids, Sertoli and Leydig cells were counted by light microscopy. One-way analysis of variance (one-way ANOVA) and Duncan test at significance level of $p \leq 0.05$ were used to analyze the data. The mean concentrations of FSH, GnRH and LH hormones in experimental groups receiving silymarin at concentration of 150 mg/kg showed a significant increase compared to the control group. Silymarin at concentrations of 100 and 150 mg/kg significantly increased testosterone hormone compared to the control group. Silymarin at concentrations of 100 and 150 mg/kg significantly increased the number of spermatids and spermatozoa cells compared to the control group. Due to the antioxidant property of silymarin, this compound increases the secretion of LH, FSH, GnRH and testosterone and the number of spermatids and spermatozoa cells in rats.