

## ABSTRACT

### **The Effect of Ethanol Feeding, on Spermatogenic Cells and Leydig Cells of Rats (*Wistar strain Rattus norvegicus*)**

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The objective of this study was to prove that ethanol consumption may reduce the counts of spermatogenic cells and Leydig cells of male rats.

This study used Posttest Only Group Design with experimental animals of 35 male rats (*Wistar strain Rattus norvegicus*) that were subjected to four types of treatment, i.e, (1) feeding with 10% 1 gr/kg/day of ethanol, (2) feeding with 10% 3 gr/kg/day of ethanol, (3) feeding with 30% 1 gr/kg/day of ethanol and (4) feeding with 30% 3 gr/kg/day of ethanol. Treatment was given daily for 45 days. At the end of the study, on the day 46<sup>th</sup>, the rats was sacrificed for examining. Sample of testis were taken for histological examination.

Data were analysed using Analysis of Variance (Anova). When the difference was found, the analysis was followed with Least Significant Difference at the level of significance of 95%.

The result of the first study showed that ethanol reduced the counts of spermatogenic cells (spermatogonia and primary spermatocytes) and Leydig cells. The second study showed that higher dosage of ethanol resulted in significantly different decrease of the cells ( $p < 0.05$ ) compared to other dosage. The third study showed that higher concentrations of ethanol resulted in significantly different decrease of the cells ( $p < 0.05$ ) compared to other concentrations.

The suppression and the damages of hormones in the hypothalamic-pituitary-gonadal axis (GnRH, LH, FSH and testosterone) by ethanol and the damage of cells by acetaldehyde (product of ethanol metabolism) was strongly suspected as being the result of spermatogonia, primary spermatocytes and Leydig cells reduction

It can be concluded that ethanol, with the highest dosage (3 gr/kg/day) and the highest concentrations (30%) causes the decrease of spermatogonia, primary spermatocytes and Leydig cells of the rats.

Keywords : *ethanol, spermatogenic cells, Leydig cells.*