

**ABSTRACT**

The aim of study was to find the effect of epinephrine administration on spermatogenesis process and testosterone level in male mice (*Mus musculus*). This was an experimental study using completely randomized design. Variables observed were spermatogenic cell count (spermatogonium, spermatocyte, and oval spermatid) and testosterone level. Data analysis was carried out using oneway analysis of variance (Anova), 5 % least significant difference test, and Kruskal Wallis test.

This study involved 36 male mice (*Mus musculus*) aged 2 months with bodyweight of 20 – 40 grams. The mice were divided into 4 group, i.e., control group (receiving subcutaneous of 0.1 ml physiological salt), and groups receiving subcutaneous epinephrine injection of 0.001 mg/20 gram BW, 0.005 mg/20 gram BW, and 0.01 mg/20 gram BW.

Analysis of spermatogenic cell count (spermatogonium, spermatocyte, and oval spermatid) showed that repeated epinephrine exposure in different doses resulted in significant reduction. The mean of reduction in treatment groups (P1,P2, P3), as compared to control group, for spermatogonium were 28.8 %, 42.4 %, and 45.5 % respectively, for spermatocyte were 13.7 %, 37.4 %, and 38.9 % respectively, and for oval spermatid were respectively 33.3 %, 44.2 %, and 54.4 %. After followed-up with 5 % least significant difference test, it was found that there was significant difference in almost all groups, except the pair P2-P3 for spermatogonium and spermatocyte count, and the pairs P1-P2 and P2-P3. However, serum testosterone level in mice blood showed no significant reduction.

It could be concluded that epinephrine administration in a high dose can result in the inhibition of spermatogenesis process, as could be seen by the reduction of spermatogenic cell count, although it did not bring the reduction of testosterone level.

**Keywords:** epinephrine, spermatogonium, spermatocyte, spermatid, testosterone.