

**Abstract of DVM thesis No:12250, Faculty of Veterinary medicine, Urmia University**  
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**Title of thesis:** Effects of intraperitoneal administration of Tannic acid on ischemia-reperfusion injury in rat testicular torsion and detorsion model: sperm parameters assessments and Biochemical and histological

### **Summary:**

Ischemia-reperfusion (IR) injury arising from testicular torsion can result in bilateral testicular damages via germ cell apoptosis and spermatogenesis disruption. The current study's goal was to examine the effects of tannic acid (TA) intraperitoneally administered on ischemia/reperfusion damage in the rat testis experimental rotation model. 18 mature male rats weighing about 250 grams each were placed into 3 groups of 6 for the experiments (n = 6). Group 1 was the sham group; in this group, the testicles were removed and handled before being redirected into the scrotum through the canal. The testicles of the rats were extracted and utilized for assessments after being stored for 60 days. Group 2 (ischemia/reperfusion group): This group will experience 3 hours of ischemia and 3 hours of reperfusion. Three rats' testicles will be taken out and subjected to biochemical analysis after six hours. The epididymis of the other 3 rats will be detached on day 60 in order to assess sperm parameters. The other 3 rats will be retained for 60 days. Group 3: This group will experience 3 hours of ischemia and 3 hours of reperfusion. Tannic acid will also be present. 100 microliters of tannic acid (50 mg/kg) will be administered intraperitoneally 30 minutes before the conclusion of the ischemia. Three rats' testicles will be taken out immediately after reperfusion and examined biochemically. The epididymis of the remaining 3 rats will be checked on day 60 in order to assess several sperm characteristics, such as sperm count, motility, and viability. Comparing the TA group animals to the other groups, the TA group animals had significantly improved tissue re-perfusion ( $p > 0.05$ ). These findings provide evidence that TA treatment could have potentially protective effects against long-term reproductive injuries following unilateral testicular IR.

**Keywords:** Ischemia-reperfusion, tannic acid, testis, rat