

The effects of acute and chronic immobilization stress on serum levels of TSH, T3 and T4 in animals

Supported by: GREEN, IAS, AIC

Background

Stress has different effects on the body and endocrine system. The main aim of this study is to determine the effects of immobilization stress on serum levels of TSH, T3 or T4 in male rats.

Methods

In this experimental study, male Wistar rats were randomly divided into control, receiving normal saline, acutely immobilized (8 h/day immobilization for 8 days), and chronically immobilized (2 h/day immobilization for 21 days) groups. Blood samples were collected using cardiac puncture method and hormone levels were measured by electrochemiluminescence (ECL) method. Data were statistically analyzed and compared between groups using ANOVA.

Results

Serum levels of T3 and T4 did not significantly change in animals enduring chronic immobilization stress; However, serum levels of T3 and T4 significantly increased in rats enduring acute immobilization stress compared with control group. There was no significant change in serum levels of TSH in animals enduring chronic or acute immobilization stress compared with control group.

Conclusion

Although chronic immobilization has no significant effects on thyroid gland function, acute immobilization increases the thyroid gland function in animals.