

## **Effects of chronic prepubertal stress on serum level of kisspeptin and histopathological changes in the kidney of the male rat**

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### **Abstract**

Chronic stress through excess levels of glucocorticoids (GC) can initiate processes that finally may lead to pathological changes in some tissues. It has been demonstrated that level of kisspeptin, an important mediator in the reproductive system and kidney morphogenesis, also is decreased during chronic stress. In the current study, we postulated that prepubertal chronic stress through decreasing levels of kisspeptin and its function can mediate histopathological changes in the kidneys. This is an experimental study done on 45 immature healthy male Wistar rats (22-24 days old) without any symptoms of puberty. Rats were divided randomly into three groups: Pretest, control and stressed. Immobilization stress was applied 2 h for 10 consecutive days and serum level of cortisol, testosterone, and kisspeptin were measured and compared between groups. Morphometric and histopathologic changes of the kidneys also were evaluated at the end of the experiment. Mean serum level of kisspeptin in pretest group, control group and stressed group were  $0.03 \pm 0.009$ ,  $90.60 \pm 4.882$  and  $15.50 \pm 3.774$  pg/mL, respectively. The level of kisspeptin and testosterone was significantly diminished in the stressed group compared to control ( $P < 0.001$ ) and cortisol level was elevated remarkably in the stressed group compared to control group ( $P < 0.001$ ). Results of this study did not show any significant morphometric and histopathologic changes between the groups. In conclusion, chronic prepubertal immobilization stress has a profound impact on kisspeptin level, however, doesn't have any significant alterations in the kidney histomorphology.

### **Key words:**

Chronic, prepubertal, stress, serum ,kisspeptin