

## عنوان مقاله:

Effects of Metformin on Experimental Varicocele in Rats

## محل انتشار:

مجله آرشیو رازی، دوره 76، شماره 2 (سال: 1400)

تعداد صفحات اصل مقاله: 14

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## خلاصه مقاله:

The current study aimed to determine the effect of metformin (MET) on histopathologic evaluation and antioxidant enzyme activity in experimental varicocele-induced rats. A total of 60 rats were randomly divided into six experimental groups. Group 1 (control) received no medication and underwent no surgery. In group 2 (sham), the rats received no medication and the abdominal cavity was opened; however, there was no varicocele induction. In group 3 (varicocele), the abdominal cavity was opened and the rats underwent varicocele induction and received no medication. In group 4, the abdominal cavity was opened and the animals received 25 mg/kg of MET for 42 days and were varicocele-induced. Groups 5 and 6 were similar to group 4 except that the animals received 50 and 100 mg/kg of MET, respectively. At the end of the 21st and 42nd days, the rats were euthanized and the left testis was removed for histological analysis and measurement of superoxide dismutase (SOD), malondialdehyde (MDA), glutathione peroxidase (GPx), and total antioxidant status levels. According to the results, a dose-dependent difference was observed in testis damage grade in the MET treated groups, compared to that reported for the varicocele group ( $p < 0.05$ ). No difference was observed between 25 and 50 mg/kg of MET ( $P > 0.05$ ). Tissue MDA levels significantly increased in varicocele rats ( $p < 0.05$ ); however, MET (25, 50, and 100 mg/kg) in a dose-dependent manner decreased varicocele-induced MDA ( $p < 0.05$ ). Experimental varicocele significantly decreased SOD activity, compared to that reported for the control group ( $p < 0.05$ ). The administration of MET (25, 50, and 100 mg/kg) significantly increased tissue SOD activity in varicocele rats ( $p < 0.05$ ). The MET (25, 50, and 100 mg/kg) in a dose-dependent manner increased GPx activity in varicocele rats ( $p < 0.05$ ). There was no difference in MDA, SOD, and GPx levels between 25 and 50 mg/kg MET groups ( $P > 0.05$ ). The aforementioned findings suggested that MET treatment had beneficial effects on varicocele.

## کلمات کلیدی:

Antioxidant, Histologic evaluation, Metformin, Varicocele, rat

## لینک ثابت مقاله در پایگاه سیویلیکا:

