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## Histometric and histochemical study on thymus and lymph nodes in mice after using ritalin

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**Background & Objective:** The objective of the present study was to histometric and histochemical changes of thymus and lymph nodes in mice after using Ritalin.

**Method:** In the present study 24 adult male Balb/C mice were used. At first the male mice were weighed and randomized into three groups: Two experimental groups and one control group. The experimental groups were orally administered Ritalin (2 mg/kg and 10 mg/kg body weight,) respectively, once a day and water by gavages for 40 days. Thereafter, animals were weighed and anesthetized. The blood samples were collected through cardiac puncture for analysis of blood cells. Then the thymus and lymph nodes were dissected out and processed for light microscopy studies through hematoxylin and eosin staining.

**Results:** The changes of thymus and lymph nodes provided morphological evidences for Ritalin induced immune suppression. The results showed that Ritalin with different doses increased the neutrophils of peripheral blood and thickness in capsule of thymus and lymph node. Also decrease in the medulla of thymus and decreasing lymphocytes in peripheral blood were significantly observed in the experimental groups. However, no significant histopathological changes were seen in the control specimens. The data were analyzed using analysis of variance (ANOVA) and  $p < 0.05$  was considered significant.

**Conclusion:** Our findings demonstrated that Ritalin administration in adulthood should be prescribed with more cautions.

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