

Abstract

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The study was designated to determine the histological and physiological effects of the cold watery extract of fenugreek seeds on the urinary system in white mice, the experimental animals 180 male white mice which is age range 3 months, treated groups carry out number of experimental animals are divided into three groups, each group contains sixty animals with control and each group divided into four subgroups, each subgroup contain fifteen animals.

After scarified animals the blood samples were collected from the control and treated groups for all concentrations and periods of the study (group one administrated with 150 mg/kg, group two administrated with 200 mg/kg, group three administrated with 250 mg/kg) to determine the levels of urea, uric acid, creatinine and albumin in blood serum.

The tissue samples showed the effects of the extract on the histological structures of the urinary system. The tissue samples were stained with hematoxylin & eosin and periodic acid Schiff stains, tissue samples were examined under the light microscope. Ocular coulometer was used for the purpose of measurements.

The histological results of first treated group showed that the glomerular capillaries have a significant increase of diameter. The proximal convoluted tubules are lined by simple high cuboidal epithelial cells with more prominent brush border. The henle's loop notification the epithelial layer of internal surface of lined with simple squamous epithelial and acidophilic cytoplasm. The distal convoluted tubules have a significant increase in diameter with increase of the extract concentration.

The tissue section in the second treated group indicates that the nephron composition is characterized by a significant increase in diameter in all components and other tubular structures of the urinary system with increased the time periods of extract administration, and showed exfoliated cells that aggregate in the lumen on tubular structures of the nephron. The extract of fenugreek seed has significant effect on the decreased the height of epithelial cells lining the internal surface of the proximal, henle's loop, and distal convoluted tubules.

The histological section of kidney in third treated group showed some of abnormal regions in different location of the cortex in the kidney with aggregation of inflammatory cell in both cortex and medulla. The renal corpuscle showed abnormal shape with blood congestion in deferent

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location in the walls of tubular structures in the kidney and the mesangial cell became very dark and irregular in shape. The tissue samples appear found limited destruction Bowman's capsule and abnormal shape of glomerular tuft. The tissue section showed blood hemorrhage between the proximal convoluted and some exfoliated epithelial cells in the lumen of tubules and disappear brush border with large amount of vacuolation in the cytoplasm of epithelial cell.

The tissue section showed that the branches of henle's loop abnormal dilation and destruction in epithelial cells. The distal convoluted tubules appeared more dilation with proliferation in the epithelial cells.

The histological result of the first treated group showed that the ureter have cellular proliferation may be slightly increase comparing with control group. The second treated group shows significantly proliferation of the epithelial cells lead to increase the thickness of the epithelial cells in the mucosa layer. The histological results of the ureter in the third treated group show the ureter that characterized by proliferation of the epithelial cells more than previous treated groups. The tissue section appeared a distraction of the epithelial layer in the various regions.

The histological section of the urinary bladder in all administration periods and with different concentration of the cold watery extract of fenugreek seeds were don't show any histological changes. The levels of the urea, uric acid, albumin and creatinine of the first and second treated groups decreased more than the control group because of the increasing in the diameter of the tubular structures of the nephron which leads to increase the glomerular filtration rate.

The third treated group which is characterized by increasing the levels of the urea, uric acid and creatinine, because of the high concentration of the fenugreek seeds extract for long time which leads to cause inflammation in the renal tubules and congestion the glomerular capillaries.