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Progressive effect of diabetes on gonads – A histological study

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Introduction: Type 1 diabetes is an autoimmune disorder characterized by lack of insulin production by the beta cells of pancreas. This lack of insulin causes a variety of systemic effects on the body metabolism. Reproductive dysfunction is one among them. The present study investigates the effects of diabetes on the reproductive system of streptozotocin induced diabetic rats.

Materials and methods: 36 adult Wistar rats (18 males and 18 females) weighing about 250–300 g were included in the study. The animals were divided into normal (males $N=6$; females $N=6$) and diabetic groups ($N=24$). The diabetic group of equal number of males and females was further subdivided into two groups of 24 ($N=12$) and 48 ($N=12$) days duration. A single dose of streptozotocin (40 mg/kg body weight) was administered intraperitoneally to the animals of the diabetic group. Interestingly the female rats were resistant to diabetes at 40 mg dosage provided. Therefore the dosage had to be increased to 50 mg/kg bw. On confirmation of diabetes the animals were observed for the planned duration, at the end of which, the animals were sacrificed; testes and ovary were dissected and processed histologically using H&E stain.

Results: Progressive degenerative changes were observed in the gonads of diabetic rats. Histological changes like disrupted seminiferous tubules, reduced interstitial tissue was observed in the testis of the male rats. Ovarian injury leading to decreased ovarian reserve was seen in the female rats.

Conflicts of interest

The authors have none to declare.

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Black tea extracts influences indomethacin induced changes in renal histopathology of male albino rats

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Context: Nonsteroidal anti-inflammatory drugs are used extensively in clinical medicine. In spite of their therapeutic utility, however, they are known to cause significant gastrointestinal and renal toxicities.

Aims: The present study was aimed to assess the ameliorative effect of black tea extract (BTE) on indomethacin induced alteration in renal histopathology.

Materials and methods: Adult rat were divided into four groups ($n=6$ /group); group I (control); group II (indomethacin, 5 mg/kg b.wt.; i.p.); group III (BTE, 2.5 g tea leaf/dL of water that is 2.5% of aqueous BTE) and group IV (indomethacin + BTE).

Statistical analysis: Statistical comparisons were performed by one-way ANOVA followed by post hoc t test.

Results: Indomethacin induced rats showed significant decrease in kidney weight, and histology of the kidney showed glomerular hypertrophy with thickened of glomerular basement membrane and mesangial proliferation. Mild thickening of tubular basement membrane with cloudy swelling (coagulation necrosis). Interstitial infiltration of focal inflammatory cells and dilated and congested vessels. Rats treated simultaneously with indomethacin and black tea extract showed near normal renal architecture as compared to indomethacin alone treated rats.

Conclusions: The result suggests that black tea extracts might have potential beneficial effect to combat against indomethacin induced renal damage in rats.

Conflicts of interest

The authors have none to declare.

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Effect of ethanolic extract of *Embilica officinalis* on intermediary metabolism and liver histopathology of rats fed with hyperlipidemic diet

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Introduction: It has been reported that hyperlipidaemia plays central role in the development of atherosclerosis, liver disorders and oxidative stress. *Embilica officinalis* (amla) also known as amla or Indian gooseberry acts as, antioxidant, antihyperlipidemic and liver tonic.

Aims: To evaluate the effect of the ethonolic extract of *E. officinalis* (amla) on intermediary metabolism of rats fed with high fat diet.

Materials and methods: Group 1 served as normal control fed with isocaloric diet. Group 2 fed with hyperlipidemic diet. Group 3 fed with hyperlipidemic diet 21 days + *E. officinalis* 21 days. Group 4 plan *E. officinalis* (amla) 21 days. Group 5 fed with hyperlipidemic diet 21 days + statin 21 days. Dose of ethonolic extract of *E. officinalis*: (100 mg/kg b. weight daily). Biochemical analysis LFT, lipid profile, KFT.

Results: % Body weight gain, liver weight and hepatosomatic index were significantly improved in hyperlipidemic rats treated with amla and statin. There was significant improvement in lipid profile and markers of liver functions. Liver shown fatty changes in hyperlipidemic rats and normal hepatocytes in hyperlipidemic rats treated with amla and statin electrocardiogram of group.

Conclusion: It can be concluded that *E. officinalis* (amla) may be good, natural therapeutics in hyperlipidemia and liver disorders.

Conflicts of interest

The authors have none to declare.

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