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The effect of vitamin E in gentamicin-induced nephrotoxicity in Wistar albino rats

Geeta Yadav*, C.B. Jha

BP Koirala Institute of Health Sciences, Dharan, Nepal, India

Aims and objectives: Gentamicin (GM) is commonly applied aminoglycoside antibiotic for treatment of gram negative infection which causes nephrotoxicity. Vitamin E had shown promising effect in Cisplatin and Adriamycin induced nephrotoxicity and expected to show the palliative effect in GM-induced nephrotoxicity. The aim was to investigate whether Vitamin E treatment prevents GM-induced nephrotoxicity.

Material and methods: 32 healthy Wistar albino rats of either sex weighing 150–200 g were randomly selected and divided into four groups, each consisting of eight rats. Group I received 1 ml of saline intraperitoneally (i.p), group II received Vitamin E 200 mg/kg i.p., group III received GM 100 mg/kg i.p. and group IV was given Vitamin E 200 mg/kg i.p. before being given the same dose of GM as the group II daily in single dose throughout 8 days of experiment. On 9th day rats were sacrificed, both kidneys from each rat were removed and kept in 10% formalin and histological analysis was done.

Results: Examination of renal cortex showed normal architecture in group I and II. GM treated rats showed dilated tubules and glomerulus with cell desquamation, patchy necrosis and presence of cellular debris with some desquamated epithelial cells in their lumen. GM with vitamin E treated rats showed almost normal glomeruli, proximal convoluted tubules and distal convoluted tubules. However there were areas of interstitial hemorrhage and vascular congestion suggesting that the vitamin E offer only partial protective effect.

Conclusion: Vitamin E was partially effective in reversing the GM induced nephrotoxicity in Wistar albino rats.

Conflicts of interest

The authors have none to declare.

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The effect of *Mucuna pruriens* seed extract on pancreas, liver and kidneys of streptozotocin induced diabetic rats

R. Rajesh*, S.S. Arunchandra, S.S. Rajasekar

Mahatma Gandhi Medical College and Research Institute, Pondicherry, India

Aims and objectives: The study was to evaluate the remedial effect of alcohol extract of *Mucuna pruriens* (Linn.) seeds on pancreas and liver of streptozotocin induced diabetic rats.

Material and methods: Out of twenty-four neonatal Wistar rats, 18 were made diabetic by intraperitoneal injection of 65 mg/kg body weight of streptozotocin. After six weeks, diabetes is confirmed by assessing the fasting Blood Glucose Level (FBGL) using a one-touch glucometer. After that the animals were divided equally into four groups i.e. Group A – Normal control, Group B – Diabetic control, Group C – *Mucuna pruriens* (MP) 200 mg/kg, Group D – Glibenclamide (GC) 1 mg/kg. Drugs administered orally for 28 days and once in a week blood glucose levels were monitored. After four weeks, animals were sacrificed for the collection of blood and visceral organs for histological and biochemical studies. Histological sections were stained with H & E.

Results: Animals in MP Group C showed statistically significant reduction in blood glucose levels and a moderate rise in the serum insulin level when compared to diabetic group. In pancreas, the islets showed increase in the beta cell mass and reduced necrotic changes. Liver functions were partially restored and the cytoarchitecture of hepatic parenchyma were improved.

Conclusion: The results of this study shows that *Mucuna pruriens* seeds are potent antidiabetic drug capable of producing structural changes in liver and pancreas.

Conflicts of interest

The authors have none to declare.

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Morphological and histological study of anterior cruciate ligament in cadaver

S. Jayagandhi*, V.K. Nim, M. Mohamkumar

Pondicherry Institute of Medical Sciences, Pondicherry, India

Aims and objectives: The knee joint has two strong intracapsular cruciate ligaments namely, anterior and posterior cruciate ligaments. The average length and width of an adult anterior cruciate ligament are 38 mm and 11 mm respectively. The bundles are named antero-medial, intermediate and postero-lateral according to their tibial attachments. The anterior cruciate ligament (ACL) is the most frequently injured ligament of the knee, accounting for 50% of all knee injuries. ACL tears are managed surgically by a double bundle or single bundle ACL reconstruction technique. Recently, the anatomic double bundle ACL reconstruction is found to be better in restoring the intact knee kinetics compared to the traditional single bundle surgery when done accurately. Injury to the ACL not only affects mechanical stability but can also damage mechanoreceptors leading to disturbance in the neuromuscular control of the injured knee. Understanding the surgical anatomy and the role of mechanoreceptors in the ACL is of paramount importance for the orthopedic surgeon.

Material and methods: The specimens were processed and sectioned under rotatory microtome at 5micron thickness and stained with H & E and Monoclonal antibodies S-100 & NFP.

Results: Out of ten cadaveric anterior cruciate ligaments, two specimens showed presents of nerve endings and another specimen showed the nerve fibres per 10 high power field under the light microscope; however the other mechanoreceptors like the pacinian corpuscles, ruffini fibres and golgi nerve endings there were absent in the sections.

Conclusion: This study may help to understand the need for preserving ACL remnants during ACL reconstruction. Moreover, the anatomical knowledge of ACL morphology will be helpful for accurate tunnel placement of ACL while performing reconstruction.

Conflicts of interest

The authors have none to declare.

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