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Abstracts

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PS-21-022

Losartan improves kidney function and decreases oxidative stress and tubular injury in spontaneously hypertensive rats during acute renal failure

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Objective: Acute renal failure (ARF) is a vicious illness, especially when it is combined with arterial hypertension. We investigated effects of losartan in spontaneously hypertensive rats (SHR) with ARF in order to determine the role of angiotensine II.
Method: The right kidney was removed and the renal ischemia was performed by clamping the left renal artery for 40 min. SHR groups received losartan (competitive antagonist of type I angiotensine II receptor) or vehicle in the femoral vein 5 min during and 175 min after the period of ischemia. All biochemical parameters were measured and kidney tissue was analysed morphologically and immunomorphologically applying Bax and Bcl-2 antibodies 24 h after ischemia.
Results: Treatment with losartan induced significantly increased urea clearance, decreased creatinine, improved oxidative stress parameters, increased HDL cholesterol and decreased tubular damages vs. ARF. High expression of pro-apoptotic Bax protein in proximal tubules of SHR with ARF was lower in losartan-treated animals. Anti-apoptotic Bcl-2 protein was decreased in distal tubules of losartan-treated postischemic SHR, indicating lower degree of apoptotic damage in them.
Conclusion: Treatment with losartan can improve kidney function, decrease oxidative stress in SHRs with ARF. Angiotensine II receptor blockade may have beneficial effects on tubular injury of postischemic SHR.

PS-21-023

Effect of chaethomellic acid on renal function in rat model of chronic renal failure

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Objective: To study the effect of chronic treatment with chaethomellic acid (CA), a highly specific inhibitor of ras farnesyl-protein transferase, on the renal function of rats with renal failure induced by renal mass reduction.
Method: Male Wistar rats were subjected to 5/6 nephrectomy (RMR) or sham-operated (SO). One week after surgery, rats have been placed in four experimental groups: RMR: rats without treatment (n=13); RMR+CA: rats treated with CA (n=13); SO: rats without treatment (n=13); SO+AC: rats treated with CA (n=13). CA was intraperitoneally administered in a dose of 0.23 μg/Kg three times a week for 6 months. Creatinine, blood urea nitrogen (BUN) and protein were measured in serum and/or urine by routine laboratory techniques.
Results: BUN, creatinine, and proteinuria were significantly lower and creatinine clearance was significantly higher in SO and SO+AC groups when compared with RMR and RMR+AC groups. There were no differences in creatinine, proteinuria and creatinine clearance between RMR and RMR+AC groups. Anyway, RMR+AC group showed significant lower BUN and lower creatinine and proteinuria, and higher creatinine clearance than RMR group.
Conclusion: In a model of renal failure induced by RMR, 6 months of treatment with CA may have some beneficial effect on renal function.

PS-21-024

Apoptosis as a prognostic marker in prediction of renal injury, after acute bleeding and volume replacement with HES 130/0.4 or Ringer solution, in a pig model

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Objective: The aim of this study is identify and quantify apoptosis in renal tissue, using a biochemical marker (TUNEL) in a pig haemorrhagic model, after intravascular volume replacement with Ringer's lactate or Hydroxyethylstarch 130/0.4) solutions.
Method: 18 Large White pigs underwent total intravenous anaesthesia with propofol and remifentanil. 25 ml/kg of arterial blood were removed from the femoral artery. Volume was replaced, RL, in group1 (n=6) and HES 130/0.4, in group2 (n=6), 20 min after bleeding. The control group did not face bleeding and volume reposition. One hour after volume replacement, pigs were euthanized with intravenous KCl, and renal fragments were taken for several studies, including immunohistochemically with TUNEL method for apoptosis detection. ANOVA was used to compare data between groups.
Results: Apoptosis was, detected in all groups, mainly in epithelial tubular cells. The number of apoptotic cells per mm2 was lower in group 1 (11.94cells/mm2), when compared with group 2 (67.94cells/mm2) and with the control group (146.34cells/mm2). Levels of apoptosis were significantly lower in group1(RL), comparing with the control group(P<0.05)
Conclusion: The median apoptotic levels were significantly lower in pigs, subjected to fluid replacement with RL, when compared with HES 130/0.4. Ringer lactate might promote better renal perfusion in the presence of severe hypovolaemia following acute haemorrhage.

PS-21-026

Renal malakoplakia in a transplanted kidney: A case report and review of the literature

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Objective: Malakoplakia is a rare chornic inflammatory condition which is presumed to be due to impaired killing of bacteria by macrophages. Renal malakoplakia in transplanted kidney is very rare.
Method: A 22 year old female on immunosuppressive therapy for a transplanted kidney presented with fever and rapid deterioration in renal function. Initial biopsy showed unremarkable looking renal parenchyma. In view of further clinical deterioration, nephrectomy of the transplanted kidney was performed.
Results: The nephrectomy specimen showed numerous yellowish-white soft, well defined nodules. The rest of the kidney looked unremarkable. The literature was searched for cases of renal malakoplakia in transplanted kidneys. The data obtained was tabulated. Malakoplakia of a transplanted kidney is very rare. Only 14 cases have been reported since 1977. All patients were on immunosuppressive therapy and experienced at least one preceding episode of urinary tract infection. There was deterioration in renal function needing dialysis, and transplant nephrectomy in the majority of cases.
Conclusion: Renal malakoplakia in kidney transplants is a very rare condition and should be included in the differential diagnosis of unusual histological features in post transplant biopsies.