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Anti-apoptotic renoprotective effect of Chitosan Oligosaccharide in rats with paraquat-induced nephrotoxicity

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Background/Aims: Increased evidences suggests that apoptosis plays a role in paraquat(PQ)-induced renal injury. The aims of this study were to evaluate the possible anti-apoptotic, renoprotective effect of chitosan oligosaccharide (COS) on the PQ induced renal injury in rats. **Method:** Nephrotoxicity was induced with an intraperitoneal injection of PQ (60mg/kg) in Sprague-Dawley rats and all rats were pretreated with COS (350mg/kg, p.o.) or normal saline 3 days before PQ administration. Experimental animals were randomly divided into two groups: PQ group and COS-PQ group and sacrificed before PQ administration (n=5/each group) and 4, 12, and 24 hours after PQ injection (n=7/each group). PQ concentration, blood urea nitrogen (BUN) and creatinine were checked. Histological damage was evaluated on Periodic acid-Schiff (PAS) stained kidney sections. Western blot assay of the activated form of caspase-3 was performed. **Results:** The serum PQ concentration levels were significantly increased in PQ group and decreased in COS-PQ group with time dependant manner (4-24hr, $p<0.05$). Serum BUN and creatinine level were continuously increased with time dependant pattern after 4hours in PQ group compared with control group ($p<0.05$), but continuously decreased in COS-PQ subgroups compared with PQ group. The expression level of caspase-3 protein was significantly increased in PQ group and decreased after 24hours in COS-PQ group compared with PQ group. After PQ injection, there was a loss of brush border and a cell death in proximal renal tubules in PQ subgroups, but there was little change in COS-PQ subgroups. **Conclusion:** In summary, the serum level of PQ concentration, BUN, creatinine and caspase-3 protein expression were significantly decreased in COS-PQ group compared to PQ group, and it suggest that COS might have the protective effect on PQ induced nephrotoxicity by inhibiting of apoptosis in rats. **Keywords:** Paraquat, Chitosan oligosaccharide, renal injury, apoptosis, rats

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A case of acute renal failure due to bilateral ureteric obstruction by retroperitoneal spindle cell sarcoma

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Acute renal failure (ARF) secondary to bilateral ureteric obstruction by retroperitoneal tumor is rare, especially spindle cell sarcoma. We experienced a case of ARF due to bilateral ureteric obstruction by retroperitoneal spindle cell sarcoma in an 82-year-old male. The patient was complained anuria. Abdominal CT scan showed a huge mass which incasing the lower abdominal aorta, bilateral common iliac arteries, descending colon and both ureters. There was a hydronephrosis of both kidney, so percutaneous nephrostomy was emergently performed. The patient underwent left hemicolectomy with nephrectomy and continuous renal replacement therapy. We report a case of ARF due to bilateral ureteric obstruction by retroperitoneal spindle cell sarcoma with a review of the literature. To our knowledge, this is the first case ARF due to retroperitoneal spindle cell sarcoma. **Keywords:** acute renal failure, retroperitoneal spindle cell sarcoma, bilateral ureteric obstruction