

The effects of salt loading on cisplatin-induced acute renal failure in rats

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#### Summary

Studies were performed to examine the effects of salt loading on cisplatin-induced acute renal failure (ARF) in Sprague-Dawley rats. Both saline-drinking (saline group) and DOCA (10mg/kg/week) plus saline-drinking (DOCA-salt group) for five weeks attenuated the increase in serum creatinine concentration compared with water-drinking rats. Tubular damage induced by cisplatin was attenuated in DOCA-salt group but not in saline group. Plasma renin activity was significantly suppressed in both groups, but renal renin content was significantly suppressed only in DOCA-salt group. No significant difference was found in urinary platinum excretion between water-drinking, saline and DOCA-salt groups. Animals receiving saline-drinking showed higher urinary cGMP excretion following cisplatin injection compared with water-drinking rats. Neither angiotensin converting enzyme inhibitor nor angiotensin receptor antagonist attenuated ARF. Both agents increased plasma renin activity, indicating suppressed plasma angiotensin II. However, intrarenal renin content was not affected by these two drugs, suggesting no significant modification of intrarenal renin-angiotensin system. Atriopeptidase inhibitor did not affect urinary cGMP excretion and ARF in water-drinking and saline-drinking rats. These findings suggest that salt loading attenuates cisplatin-induced ARF. This effect was caused through neither the enhanced urinary cisplatin excretion nor the potentiation of ANP action. Further studies are necessary to study the effects of suppression of intrarenal renin-angiotensin system.