

## Renoprotective Effect of Statin in DOCA-salt Hypertensive Rats

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**Background:** Pleiotropic effects of statins represent potential mechanisms for the treatment of end-organ damage in hypertension. This study has investigated the effects of statin (10 mg/kg/day) on renal function impairment, glomerulosclerosis and tubulointerstitial fibrosis in DOCA-salt hypertensive (DSH) rat.

**Methods:** Rats were implanted with DOCA strips (200 mg/kg) on 1 week after unilateral nephrectomy. Rats received control diet with or without crestor. 3 weeks after DOCA implantation, systolic blood pressure (SBP) was measured by tail cuff method and urinary albumin excretion ratio (UAE) was calculated by urine microalbumin and creatinine. The glomerulosclerosis and tubulointerstitial fibrosis was determined by masson's trichrome stain. The monocyte chemoattractant protein-1 (MCP-1), intercellular adhesion molecule-1 (ICAM-1), and endothelin-1 (ET-1) were determined by real time PCR. The expression of ED-1, transforming growth factor- $\beta$  (TGF- $\beta$ ), and connective tissue growth factor (CTGF) was determined in the kidney by semiquantitative immunoblotting and immunohistochemistry.

**Results:** In DSH rats, SBP was increased, which was not affected by crestor treatment. Creatinine clearance was decreased while UAE was increased in DSH rats compared with controls, which were attenuated by statin treatment. Glomerulosclerosis and tubulointerstitial fibrosis in DSH rats were attenuated by statin treatment. The mRNA expression of MCP-1, ICAM-1, and ET-1 was increased in DSH rats, which was attenuated by statin treatment. The expression of ED-1, TGF- $\beta$ , and CTGF was increased in the kidney of DSH rats, which was counteracted by rosuvastatin treatment. Conclusions. Statin is effective in preventing progression of renal injury in DSH rat, the mechanism of which is associated with anti-inflammatory and anti-fibrotic effects.

**Key Words:** DOCA-salt, 사구체경화, 고혈압, statin

DOCA-salt, Glomerulosclerosis, Hypertension, Statin