ABSTRACT

Aim: The aim of the study is to evaluate the renoprotective effect of Atorvastatin and Telmisartan in monotherapy and in combination on uninephrectomized STZ induced DN in rats.

Methodology: Right uninephrectomy was performed under light anaesthesia with thiopentone sodium (45 mg/kg, i.p). Diabetes was induced by i.p injection of STZ to rats, after 18 h of fasting. The rats with fasting serum glucose level of above 300 mg/dl at 72 h after STZ injection were selected and randomized them to atorvastatin (10 mg/kg, p.o), telmisartan (10 mg/kg, p.o) and in combination for a period of 30 days. The body weight, serum and urine glucose, food intake, urine output, left kidney weight, water intake, serum and urine creatinine, serum triglyceride, serum cholesterol, serum albumin, microalbumin, BUN, total protein were evaluated at the end of the treatment. Histology analysis of the left kidney was performed at end.

Results: The combination therapy was more effective in reduction of hypertrophy, water intake, urine output, serum triglyceride, BUN, total protein, serum cholesterol, urine glucose, serum creatinine and microalbuminuria and showed improvement in urine creatinine and serum albumin level. Uninephrectomy exacerbated renal injury in the non diabetic and diabetic rats, while the combination therapy has shown more protection than monotherapy in renal injury. There was no effect on the serum glucose, food intake.

Conclusion: This study showed renoprotective effect in both Atorvastatin and Telmisartan but showed more protection and delaying the progression of severe form of diabetic nephropathy in combination in both intact and uninephrectomized groups.

Key words: Atorvastatin, Telmisartan, uninephrectomy, diabetic nephropathy