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The Effect of Lercanidipine added to renin-angiotensin-aldosterone blockade on proteinuria excretion rate and renal function in patients with non-diabetic chronic kidney disease

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Background: Lercanidipine is a dihydropyridine calcium antagonist with high lipophilicity and high vascular selectivity. Calcium channel blocker may have the renoprotective effect but its effect is a controversial issue. Calcium channel blocker could improve renal function in patients previously treated with angiotensin-converting inhibitors. We investigated that the effectiveness of lercanidipine in patients with non-diabetic chronic kidney disease.

Methods: A total of 54 hypertensive chronic kidney disease patients from 3 Korean centers was recruited. All patients were receiving treatment with either angiotensin converting inhibitor or angiotensin receptor blocker and have chronic renal failure stage 2, 3, 4 ($15\text{mL}/\text{min} \leq \text{eGFR} \leq 90\text{mL}/\text{min}$). Antihypertensive therapy with the lercanidipine at a dose of 10 ~ 20mg once a day was given to all patients. Serum creatinine and proteinuria had to be measured at every visit. Blood samples were also analyzed for cholesterol, hsCRP, electrolyte, albumin.

Results: Forty eight patients were completely finished for this study (age 49.24 ± 12.82 years, male 38%, female 62%). Blood pressure significantly decreased from $139.02 \pm 8.94/86.70 \pm 7.73\text{mmHg}$ to $122.86 \pm 12.78/74.14 \pm 7.04\text{mmHg}$ ($p < 0.05$). Proteinuria excretion rate (random urine protein/creatinine ratio) significantly decreased from 1.94 ± 1.77 to 1.61 ± 1.52 ($p < 0.05$). eGFR showed no significant difference.

Conclusion: We investigated that Lercanidipine showed an improvement in proteinuria excretion rate and a good tolerability in non-diabetic chronic kidney disease.

Keywords: calcium channel blocker, Proteinuria, renin angiotensin system