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비당뇨 고혈압 환자에서 야간혈압 비하강 (non-dipper) 양상과 좌심실비대가 만성콩팥병 발생에 미치는 영향

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Non-dipper Status and Left Centricular Hypertrophy (LVH) may be the Risk Factors for the Development of Chronic Kidney Disease (CKD) in Non-diabetic Hypertensive Patients

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Purpose : Non-dippers are known to be associated with increased incidence of various target organ damages in hypertensive patients. In this study, we hypothesized that non-dipper status would be associated with the development of CKD in patients treated with antihypertensive medications.

Methods : This study included 102 non-diabetic hypertensive patients with estimated glomerular filtration rate (eGFR) ≥60 ml/min/1.73m^2. Baseline demographic and laboratory data were collected and 24-hr ambulatory blood pressure monitoring (ABPM) and echocardiogram were performed at the beginning of the study, and the levels of serum creatinine were followed up. Non-dippers were defined if their nocturnal systolic blood pressure (BP) did not decrease by ≥10% compared to the average daytime BP, and CKD was defined as a sustained decrease in eGFR of <60 ml/min/1.73m^2.

Results : The average duration of follow-up was 51.7±12.5 months. When participants (mean age 56.0±10.4 years, 39 men, initial eGFR 81.4±16.1 ml/min/1.73m^2) were divided into two groups as dippers (n=60) and non-dippers (n=42), there were no significant differences in age, duration of hypertension, mean fulltime BP by 24-hr ABPM, urine albumin/creatinine (A/C) ratio, and eGFR between two groups. During the follow-up period, an eGFR <60 ml/min/1.73m^2 occurred in 11 patients, and the incidence of CKD was higher in non-dippers compared to dippers [8 (7.8%) vs. 3 (2.9%) patients, $p<0.05$]. When comparisons were made between patients who developed CKD and not, patients with CKD had higher baseline urine A/C ratio (52.3±58.6 vs. 17.8±29.3 mg/g, $p<0.05$), higher prevalence of LVH [3 (27.3%) vs. 5 (5.5%) patients, $p<0.05$] and lower serum HDL-cholesterol (41.7±8.3 vs. 50.4±12.4 mg/dL, $p<0.05$). In a multiple logistic regression analysis, non-dipper status (OR 2.4) and the presence of LVH (OR 3.3) were independent risk factors for the development of CKD.

Conclusion : These findings suggest that non-dipper status and LVH may be the therapeutic targets for the prevention of the development of CKD in non-diabetic hypertensive patients.

Key Words : 야간혈압 비하강, 좌심실비대, 만성콩팥병
Non-dipper, Left ventricular hypertrophy, Chronic kidney disease