

혈액 투석중인 말기신부전 환자에서 혈압과 불량한 임상적 예후와의 관련성

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Association between Blood Pressure Levels and Adverse Clinical Outcomes in Korean Patients Undergoing Hemodialysis

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Background: Hypertension is a well-known independent predictor of the clinical outcome in patients with end-stage renal disease (ESRD). In ESRD patients on hemodialysis (HD), therefore, blood pressure (BP) control is a very crucial issue and most current guidelines recommend that target pre- and post-dialysis blood pressure (BP) should be <140/ 90 mmHg and <130/80 mmHg, respectively. However, some previous studies failed to demonstrate a favorable prognostic power of this target of BP in these patients.

Method: A prospective cohort of 807 incident HD patients from 36 dialysis centers of the Clinical Research Center for ESRD in Korea was selected, and the impact of BP levels on a composite of all-cause mortality and cardiovascular events (primary outcome) was clarified. Time-averaged pre- and post-dialysis systolic BP (SBP) and diastolic BP (DBP) were determined as means of each BP measured at 6-month intervals.

Results: The mean time-average BPs were as follows: pre-dialysis SBP, 146±19 mmHg; pre-dialysis DBP, 77±12 mmHg; post-dialysis SBP, 143±18 mmHg; and post-dialysis DBP, 77±12 mmHg. During a mean follow-up duration of 19.0 months, 65 patients died and 49 CV events occurred. Compared to patients with pre-dialysis SBP of 140-149 mmHg, hazard ratios (HRs) for the primary outcome were 2.16 [95% confidence interval (CI), 1.02-4.56; p=0.044], 1.90 (95% CI, 0.94-3.84; p=0.073), 2.28 (95% CI, 1.13-4.60; p=0.021), and 2.42 (95% CI, 1.23-4.76; p=0.010) in the pre-dialysis SBP groups of <130, 130-139, 150-159, and ≥160 mmHg after adjustment for potential confounders. Similar relationship was also observed across post-dialysis SBP categories, where post-dialysis SBP ≥150 mmHg was associated with an increased risk of the composite outcome. In terms of DBP, HRs for the primary outcome in the pre-dialysis DBP groups of <60, 60-69, 80-89, and ≥90 mmHg were 0.56 (95% CI, 0.25-1.29; p=0.171), 0.50 (95% CI, 0.29-0.85; p=0.011), 0.87 (95% CI, 0.51-1.48; p=0.596), and 2.55 (95% CI, 1.13-5.71; p=0.024), respectively, when compared to patients with pre-dialysis DBP of 70-79 mmHg. Similarly, post-dialysis DBP ≥90 mmHg exhibited the higher risk for the composite outcome.

Conclusions: Pre-dialysis SBP of 140-149 mmHg and post-dialysis SBP of 130-149 mmHg are revealed to be the optimal BP levels associated with a favorable clinical outcome in incident HD patients. In addition, maintaining pre- and post-dialysis DBP <90 mmHg may provide a more beneficial effect in these patients.

Key Words: 혈압, 혈액투석, 불량한 예후

Blood pressure, Hemodialysis, Adverse outcome