S-C23

혈액투석 환자에서 세포외액의 과잉상태와 투석 후 수축기혈압 상승과의 연관성

강남세브란스병원

박해열, 김석형, 최아란, 이미래, 강유리, 정아라, 최훈영, 하성규, 박형천

Extracellular Overhydration is associated with Increased Postdialysis Systolic Blood Pressure in Hemodialysis Patients

Hae Yeul Park, Seok-hyung Kim, Ah Ran Choi, Mi Rae Lee, Yu Ri Kang, A Ra Jung
Hoon Young Choi, Sung Kyu Ha, Hyeong Cheon Park

Department of Internal Medicine, Gangnam Severance Hospital,
Yonsei University College of Medicine, Seoul, Korea

Background: Intradialytic hypertension is associated with increased morbidity and mortality for hemodialysis (HD) patients. Recent studies demonstrated that increased postdialysis extracellular volume may account for the rise in postdialysis systolic blood pressure (SBP) in HD patients. The aim of this study was to assess the relationship between volume status and blood pressure by using multifrequency bioelectrical impedance analysis (BIA) in HD patients.

Method: All laboratory and clinical measurements for volume status assessment were performed during mid-week HD. SBP was taken in a standardized manner both immediately before starting HD and after HD in the nonfistula arm using the HD machine integrated electronic BP monitor. Multifrequency bioelectrical analysis measurements were done before and then 10 min after dialysis using InBody S10. Pre- and post-dialysis B-type natriuretic peptide level was measured using Triage BNP test (Alere).

Result: We enrolled 68 HD patients who were clinically stable. The mean age was 63.5±12.5 years, 63.2% were male, and 66.1% were diabetic. Predialysis weight was 62.5±11.5 kg, and postdialysis weight was 60.0±11.1 kg. Predialysis SBP was 146.7±22.7 mmHg and postdialysis SBP was 146.0±25.8 mmHg. Predialysis BNP was 1269.8±1499.3 pg/mL and postdialysis BNP was 791.1±995.8 pg/mL. Patients were divided into 3 groups based on a fall in SBP of 20 mmHg or more (Hypotensive, 18%), an increased SBP of 10 mmHg or more (Hypertensive, 53%), and a stable group (29 %). There were no differences in patient demographics, dialysis prescriptions, predialysis weight, total body (TBW), extracellular (ECW), and intracellular water (ICW). The ratio of ECW to TBW was significantly higher in the hypertensive group, particularly postdialysis (0.4078 vs. stable group 0.3971 and hypotensive group 0.3904) (p=0.001). In contrast, BNP failed to predict overhydration status in HD patients.

We found that patients who had increased blood pressure after dialysis had greater volume status by increased ratio of ECW to TBW.

Conclusion: Our data suggest that HD patients who experience increase in postdialysis SBP should review their target dry weights and volume status, with emphasis on increased ratio of ECW to TBW.

Key Words: 생체 임피던스 측정, 체수분상태, 혈액투석
BIA, Volume status, Hemodialysis