

Abstract Type : Poster

Abstract Submission No. : 1648

Clinical value of measuring central blood pressure in hemodialysis patients

Seok-hyung Kim, Hyunsuk Kim, Gwangho Choi, Jin-eop Kim, Soyeon Jeon, Jisoo Kim, Jong-Woo Yoon

Department of Internal Medicine-Nephrology, Chuncheon Sacred Heart Hospital, Korea, Republic of

Objectives: Hypertension is an independent predictor of cardiovascular risk in end-stage renal disease. Noninvasive brachial cuff blood pressure(BP) measurement is the principal method for hypertension diagnosis. However, many studies indicate a possible inaccuracy of cuff BP measurement, and whether auscultatory or oscillatory cuff BP accurately measures central BP (cBP) has never been systematically determined. Many investigators suggest that cBP is more clinically relevant than brachial BP (bBP). And recent studies showed that cBP was higher in dialysis group than in the control or early CKD group. In this study we aimed to investigate the clinical value of cBP as a predictor of arterial stiffness in hemodialysis patients.

Methods: We reviewed the participants' medical records, and cBP and bBP were measured before hemodialysis. cBP was measured using applanated arterial tonometry (HEM-9000AI, Omron, Japan). BaPWV is measured by recording pulse waves of both arm and both ankles from the pressure signal obtained by measuring 4-extremity BP.

Results: The median age was 66 years (interquartile range 58-76 years). There were no significant differences between high pulse pressure (PP) group and low PP group in sex, hemodialysis vintage, end-stage renal disease etiology, and type of vascular access. However, the difference between cBP and bBP was greater in high PP group ($P = 0.03$). Both central and brachial BP showed a linear correlation with BaPWV ($r^2=0.610$, $P < 0.001$, $r^2=0.663$, $P < 0.001$, respectively). And difference between central and brachial BP also showed linear correlation with BaPWV ($r^2=0.160$, $P=0.018$). cBP was significantly associated with BaPWV (hazard ratio [HR] 1.035; 95% CI 1.013-1.057, $P = 0.001$). After adjusting for age, sex and hemodialysis vintage, cBP was independently associated with BaPWV (hazard ratio [HR] 1.039; 95% CI 1.015-1.063, $P = 0.001$).

Conclusions: Central BP may be suggested as an independent risk factor for arterial stiffness in hemodialysis patients