

투석중인 말기 신부전 환자의 혈관 석회화에 영향을 미치는 인자들

인하의전원 내과학교실

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Factors of Vascular Calcification in End-stage Renal Disease Patients on Dialysis

Woo Chul Joo, Seung Woo Lee, Woong Chun, Jun-Ho Song, Moon-Jae Kim

Internal Medicine, College of Medicine, Inha University

Purpose : To investigate the factors that influence on vascular calcification in end-stage renal disease (ESRD) patients on dialysis cross-sectionally.

Methods : Dialysis duration of >3 years was included. Plain X-ray films of lateral lumbar spines, pelvis and hands were taken. Vascular calcifications were evaluated in large and small muscular arteries (abdominal aorta, iliac, femoral, radial and digital), using calcification scores proposed by Kauppila et al (Atherosclerosis 132: 245-250, 1997) and Adragao et al (Nephrol Dial Transplant 19:1480-1488, 2004). Mean values of serum albumin (Alb), calcium (Ca) and phosphate (P) concentrations over 2 years were sought.

Results :

1. Total 126 patients were included. Mean age were 57+13, 54+12 years in hemodialysis (HD) and peritoneal dialysis (PD) groups respectively. Dialysis duration was 7.4+3.4 (median 6.0) years in HD group, 6.6+2.2 (median 6.0) years in PD group. Diabetics (DM) were 29 (56.9%) in HD and 25 (33.3%) in PD. Male to female ratio was 1:1.6 in HD and 1:1.9 in PD.

2. There were no differences in calcification scores of L-spine (CSL) and pelvis (CSP) between HD and PD. The calcification score of hand (CSH) were higher in HD than in PD (1.3+2.1 vs. 0.7+1.8, $p=0.027$). DM had higher CSL, CSP and CSH than non-DM. Male showed higher CSP than female. Patients with HD duration >5 years showed significantly higher CSL than others.

3. CSL was correlated with CSP ($r=0.561$, $p<0.001$) and CSH ($r=0.236$, $p=0.008$). In HD patients, CSL was correlated with age ($r=0.378$, $p=0.006$) and Alb ($r=-0.284$, $p=0.046$). In PD patients, CSL was correlated with age. In DM, CSH was correlated with dialysis duration ($r=0.383$, $p=0.004$).

4. In linear regression analysis, CSL was independently correlated with age, DM and P, CSP with DM, and CSH with DM and dialysis duration. In logistic regression analysis, the presence of calcification in L-spine was independently correlated with age, dialysis duration, DM, Alb and P, one in pelvis with sex, DM, and dialysis duration, and one in hands with sex, DM, mode of dialysis, Alb and Ca.

Conclusion : Factors affecting the vascular calcification might be different in large and small muscular arteries. Furthermore, there seems to be different in the location of vascular calcification between HD and PD.

Key Words : 혈관 석회화, 복막투석, 혈액투석

Vascular calcification, PD, HD