

한국인 만성 신장병 환자의 각 stage에 따른 Platelet function analyzer -100 폐색시간의 변화과 영향 인자들

울산대학교 의과대학 서울아산병원 신장내과¹, 진단검사의학과²

김현정¹ · 김경민¹ · 지현숙² · 박정식¹ · 김순배¹

Prevalence of Abnormal in Vitro Closure Time (CT) using Platelet Function Analyzer-100 (PFA-100) in Chronic Kidney Disease (CKD) Patients and Analysis of Factors Affecting it

Hyunjung Kim¹, Kyung Min Kim¹, Hyun-Sook Chi², Jung Sik Park¹, Soon Bae Kim¹

University of Ulsan College of Medicine¹ Nephrology Division of Nephrology, Department of Laboratory²

Background: PFA-100 system evaluates platelet function by determining the time to occlusion of an aperture in a membrane coated with collagen and epinephrine (CEPI) or collagen and ADP (CADP) as citrated whole blood flows. This study was performed to evaluate prevalence of abnormal in vitro closure time using Platelet Function Analyzer-100 in patients with CKD and to analyze factors associated with it.

Methods: The cross-sectional study was performed on 356 patients with CKD [Stage I 30, II 36, III 30, IV 56, V 204, chronic hemodialysis (CHD) 131, chronic peritoneal dialysis (CPD) 73]. CEPI-CT, CADP-CT, CBC, serum creatinine (Cr), blood urea nitrogen (BUN) were measured. Estimated glomerular filtration rate (eGFR) was calculated with modified MDRD equation. We already reported that the normal range of CEPI-CT was 82-182 sec and CADP-CT 62-109 sec in Koreans (Ann Clin Lab Sci 38:247, 2008).

Results: In predialysis patients, both CEPI-CT and CADP-CT were correlated with BUN ($r=0.464$, $p<0.001$, $r=0.230$, $p=0.004$), but not with Cr or eGFR. In CHD, CEPI-CT was not correlated with BUN or Cr. In CPD, there were significant correlations with CEPI-CT and BUN or Cr ($P<0.001$ and 0.005). In both CHD and CPD patients, there were no correlations between CADP-CT and BUN or Cr. Both CEPI-CT and CADP-CT did not correlate with age, gender, hemoglobin, or platelet.

Conclusion: We reported prevalence of abnormal CT in predialysis CKD patients for the first time. In CHD and CPD patients, prevalence of abnormal CT were similar with those previously reported. CT was correlated with BUN in predialysis CKD patients.

Key Words: PFA-100 폐색시간, 만성신질환, 출혈경향

PFA-100 CT, Chronic kidney disease, Bleeding

Table 1. Prevalence of PFA-100 CT Abnormality in CKD Patients

| Stage | I | II | III | IV | V | CHD | CPD |
|---------|--------------|-------------|--------------|-------------|---------------|--------------|-------------|
| CEPI-CT | 13.3% (4/30) | 8.3% (3/36) | 16.6% (5/30) | 32% (18/56) | 53% (109/204) | 58% (76/131) | 45% (33/73) |
| CADP-CT | 13.3% (4/30) | 8.3% (3/36) | 6.6% (2/30) | 21% (12/56) | 50% (101/204) | 50% (65/131) | 49% (36/73) |