

혈액투석 환자에서 아스피린 저항성의 발생빈도와 관련인자

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Aspirin Resistance: Prevalence, Affecting Factors and Effects on Cardiovascular Complication and Vascular Access Failure in Maintenance Hemodialysis Patients

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Purpose: ESRD patients are frequently associated with cardiovascular (CV) morbidity and mortality. Even though aspirin has been effectively used for primary and secondary prevention of cardiovascular disease, some patients experience occurrence of CV events during aspirin use. Association of aspirin resistance and CV events have been reported in many cardiovascular disease and some kidney transplantation patients. The prevalence and effects of aspirin resistance on cardiovascular complication and vascular access failure is not known.

Methods: 117 hemodialysis patients from two hospital more than 1 month of hemodialysis duration were included. Enrolled patients took 100–200 mg of aspirin more than 1 month. Patients who used NSAIDs or drugs affecting anti-platelet effects, patients of thrombocytopenia were excluded. To evaluate definition of laboratory aspirin resistance, measurement of anti-platelet effects was assessed by VerifyNow[®] assay device. Aspirin resistance was defined as aspirin resistance unit (ARU) >550.

Results: 117 patients showed average age 57.7 ± 12.1 and 68 were female (58.1%). Mean dialysis duration was 51.5 month. 67 patients (57.3%) were diabetes, 44 patients (37.6%) were associated with cardiovascular disease. 96 patients (82.1%) were hemodialyzed with arteriovenous fistula (AVF). Aspirin resistance was observed in 18 of 117 patients (15.4%). Aspirin resistance patients showed more higher level of hsCRP (14.24 ± 12.63 vs 5.04 ± 8.53 , $p=0.02$) and it also showed positive correlation with serum vitamin D level ($r=0.304$, $p=0.001$) and negative correlation with calcium ($r=-0.271$, $p=0.003$), phosphate ($r=-0.177$, $p=0.05$), HDL ($r=-0.211$, $p=0.02$). Multivariety analysis showed vitamin D level (OR 1.117, 95% CI 1.025–1.117, $p=0.01$), phosphate (OR 0.618, 95% CI 0.395–0.968, $p=0.04$), HDL (OR 1.065, 95% CI 1.010–1.124, $p=0.02$) as a independent factor. There were no relationship between aspirin resistance with age, sex, dialysis duration, diabetes, BMI, smoking, aortic calcification, vascular access dysfunction and history of cardiovascular disease.

Conclusion: Aspirin resistance was observed 15.4% in hemodialysis patients and was not associated with occurrence of vascular access dysfunction and history of cardiovascular disease. But relationships with several factors affecting vascular remodeling mechanisms such as vit D, HDL, phosphate, calcium and hsCRP need further investigations.

Key Words: 혈액투석, 아스피린, 심혈관계 질환
Hemodialysis, Aspirin, Cardiovascular disease