Nephrology Dialysis Transplantation 33 (Supplement 1): i543–i551, 2018
doi:10.1093/ndt/gfy104

SP582

ARTERIOVENOSUS THROMBOSIS AND MEANPLATELET VOLUME ASSOCIATION IN ROUTINE HEMODIALYSIS PATIENTS

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INTRODUCTION AND AIMS: The most common complication of arteriovenous fistulas (AVF), which is the most preferred and the most reliable vascular access route for hemodialysis, is thrombosis. In this study, we aimed to investigate the use of mean platelet volume as an inexpensive and noninvasive marker in the early diagnosis and intervention of AVF thrombosis.

METHODS: The study was retrospectively performed by taking a group consisting of 48 hemodialysis patients who underwent one or more fistula thrombosis episodes after AVF operation and 47 hemodialysis patients without any AVF thrombosis episodes for 12 months or more.

Parameter	AVF thrombosis (n=48)	AVF thrombosis (n=47)	P value
Age(years)	56,27±10,63	59,19±9,88	0,169
Male(n,%)	21 %45,7	21 %54,3	0,357
DM presence(n,%)	18 %37,5	23 %48,9	0,261
HT presence(n,%)	30 %62,5	11 %22,9	0,055
Atherosclerotic cardiovascular disesase(n,%)	11 %22,9	11 %23,4	0,995
Smoking(n,%)	19 %39,6	14 %29,8	0,205
Perypheral artery disease(n,%)	3	2	0,09
Antiagregan drug use(n,%)	26 %54,2	30 %63,8	0,338
HDL(mg/dl)	35,92±11,85	36,22±10,45	0,938
LDL(mg/dl)	102,74±49,96	109,45±38,12	0,133
Ferritin(ng/ml)	510,16±366,97	519,76±247,72	0,331
PTH(pg/dl)	513,54±401,34	509,24±585,78	0,482
Calcium	8,61±0,88	8,55±0,88	0,817
Phosporus	5,33±1,44	5,19±1,07	0,655
Hemoglobin(g/dl)	10,71±1,30	11±1,47	0,315
Plt(10^3/uL)	196,10±42,95	206,72±41,18	0,052
WBC(10^3/uL)	7,64±2,38	7,23±1,94	0,354
Mean Platelet Volume	8,60±0,96	7,83±0,80	0,001
aPTT	30,05±4,35	29,09±1,63	0,156
Glucose(mg/dl)	101,17±34,90	129,02±65,99	0,011
Albumin(g/dl)	3,84±0,42	3,85±0,39	0,911
Uric Acid(mg/dl)	191,50±129,65	174,22±99,51	0,469
Tryglyceride(mg/dl)	191,50±129,65	174,22±99,51	0,469
CRP(mg/lt)	15,36±15,62	11,34±16,77	0,238

RESULTS: When patients were divided into two groups as AVF thrombosis (48 patients) and non-AVF thrombosis (47 patients) LDL, ferritin, PTH, calcium, phosphorus, hemoglobin, blood pressure, thrombocyte count, aPTT, pT, albumin, uric

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acid, urea, triglyceride and crp parameters were not different (p> 0.05) between the thrombosis and non-thrombosis groups. There was a significant difference between thrombosis and non-thrombosis groups in terms of MPV and glucose values (p values: 0.001, 0.011, respectively)(Table 1). In the analysis of correlation between the level of MPV and other variables significant correlation was found between MPV and antiaggregant drug use, phosphorus level, platelet count and uric acid levels (p values: 0.015, 0.044, 0.002, 0.038, respectively).

CONCLUSIONS: MPV was found to be significantly higher in the thrombosed group of dialysis patients in this study.In our study, parameters with significant correlations with the level of MPV were found to be similar in both groups(Table 1).Therefore, we associated the MPV increase in the thrombosed group with fistula thrombosis.There are many studies in the literature that show the association of thrombosis with MPV(1,2). However, our study is the first study to show the association between AVF thrombosis and MPV in dialysis patients. The most common cause of loss of AVF is thrombosis and early diagnosis and early intervention reduces fistula losses. It has been demonstrated in this study that MPV can be used in patients with dialysis as cost-effective and noninvasive test which can indicate thrombosis. Referances: 1. Kovács, Sándor, et al. "Characteristics of platelet count and size and diagnostic accuracy of mean platelet volume in patients with venous thromboembolism. A systematic review and meta-analysis." *Platelets* (2017): 1-9. 2. Makowski, Marcin, et al. "Platelet reactivity and mean platelet volume as risk markers of thrombogenesis in atrial fibrillation." *International Journal of Cardiology* 235 (2017): 1-5.

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