

Is Mean Platelet Volume a New Predictor in Confirming a Diagnosis of Acute Appendicitis?

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We read with interest the article by Albayrak and colleagues on mean platelet volume: a new predictor in confirming acute appendicitis diagnosis.¹ In this article, they stated that mean platelet volume (MPV) was significantly decreased in patients with acute appendicitis (AA) compared to the control group.

Mean platelet volume and platelet distribution width (PDW) are the platelet indices measured by automatic cell analyzer, and they are used for the differential diagnosis of both thrombocytosis and thrombocytopenia,^{2,3} as well as to reflect the disease activity in rheumatoid arthritis. There were controversies over the interpretation of changes of MPV in rheumatoid arthritis.⁴ Kisacik et al and Kim and Kim insisted that MPV

healthy people who visited the Health Promotion Center of Hanyang University Hospital for the purpose of checkups without pathologic conditions, who were later confirmed to have no abnormal findings. Healthy controls and the patients with AA showed significant difference in WBC, PLT, MPV, and PDW (*P* values were <.001, .001, <.001, and <.001, respectively). However the patients with AA showed no significantly different WBC, PLT, MPV, and PDW when compared to the patients with EP (*P* values were .421, 1.000, .285, and .381, respectively; Table 1).

Although there was a limitation that we had a small sample size, we still concluded that platelet indices may be useful to

Table 1. Platelet Numbers and Platelet Indices of Studied Groups

	Controls (n = 85)	Acute Appendicitis (n = 130)	Ectopic Pregnancy (n = 51)	<i>P</i> Value ^a	<i>P</i> Value ^b
Age	45.1 ± 12.1	43.4 ± 16.6	31.6 ± 5.9		
WBC (× 10 ⁹ /L) ^c	5.74 ± 1.60	8.29 ± 3.74	7.51 ± 2.80	<.001	.421
PLT (× 10 ⁹ /L) ^c	253.13 ± 55.89	222.61 ± 60.37	223.57 ± 57.40	.001	1.000
MPV (fL) ^c	10.58 ± 0.80	10.04 ± 0.83	9.80 ± 0.86	<.001	.285
PDW (fL) ^c	12.06 ± 1.80	11.12 ± 1.54	10.70 ± 1.56	<.001	.381

Abbreviations: WBC, white blood cell; PLT, platelet count; MPV, mean platelet volume; PDW, platelet distribution width.

^a Student *t* test for comparing control groups with acute appendicitis.

^b Student *t* test for comparing acute appendicitis with ectopic pregnancy.

^c Measured with Sysmex XE-2100 automatic cell counter (Sysmex, Kobe, Japan).

decreased in rheumatoid arthritis,^{4,5} but Yazici et al on the other hand, reported that MPV increased in the same diseases.⁶

Acute appendicitis is one of the acute abdomens which include an ectopic pregnancy (EP), an acute peptic ulcer, an acute pancreatitis, an acute peritonitis, and an acute cholecystitis. They require immediate evaluation and diagnosis because AA and EP indicate conditions that call for surgical intervention. Thus, we aimed to observe in female patients whether platelet indices are helpful to distinguish AA from an EP. To do so, we selected 85 healthy female control groups, 130 female patients with AA and 51 patients with EP and measured white blood cell (WBC) counts, platelet count (PLT), MPV, and PDW. The healthy control candidates were selected among

distinguish AA from normal population in female candidates, but they are not capable of discriminating AA and EP in female patients. Thereby we recommend them to perform urine pregnancy test to rule out EP in female patients with acute abdominal conditions.

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