

Chapter 6

EVALUATION OF MEAN PLATELET VOLUME IN PATIENT WITH CHRONIC SPONTANEOUS URTICARIA

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Chronic spontaneous urticaria (CSU) is a most common of skin atopic diseases. There are not specific laboratory tests for used to its diagnosis. The purpose of this study is to determine the existence of allergic inflammation parameters like mean platelet volume (MPV) and platelet lymphocyte ratio (PLR) having prognostic value as well as also to contribute them available for clinical use.

INTRODUCTION

Urticaria is a common skin disease and its symptoms are being known wheals and angioedema. CSU, which was defined by at least six weeks of continuous or recurrent urticaria due to known or unknown causes and It is accepted to occur in approximately 1%–2% of the population. CSU is a mast cell-mediated disease. Physical urticarias are grouped separately because of the special nature of their triggering physical factors, whereas chronic urticaria (CU) is defined as wheals appearing spontaneously without any external physical stimuli and the disease lasts 6 weeks.

The disease has a large effect on the quality of life, and more than 30% of patients with moderate to severe symptoms still have CSU after 5 years.

CSU is characterized by the activation of the coagulation cascade. It is probable that both intrinsic and extrinsic coagulation cascade pathways are affected in CSU patients. The coagulation system factors that most likely involved in the pathogenesis of CSU are tissue factor, thrombin, D-dimer, PF1+2, and activated factor VII. Thrombin activation, which is derived from platelets, directed investigations toward the evaluation of mean platelet volume (MPV) and CSU correlation. MPV is a potential marker of platelet reactivity because larger platelets are metabolically and enzymatically more active. It was shown that platelets secrete a large number of mediators of thrombosis, coagulation, inflammation, and atherosclerosis. In some studies; MPV values were found significantly more in patients with CSU than the control group.

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smaller than our study. The results for MPV were similar.

In (Kasperska-Zajac & al, 2014), study; they were evaluated of 66 CU patients with variable disease severity and 36 sex, BMI (<25) and age matched healthy subjects as prospective. No significant differences between the CU group and controls (7 in each group) for MPV. The sample size of the study of Kasperska-Zajac and colleagues was smaller than our study. Their study was prospective and MPV values similar in CU patients and controls.

In these studies, no diagnostic evaluation of MPV, PLR and ELR was performed. In our study, MPV, PLR and ELR in patients with CSU were tried to be evaluated from a diagnostic point of view. Age, MPV and PLR are independent risk factors on urticaria. MPV, PLR and ELR values of patients with urticaria group were found to be significantly higher than healthy subjects. All three variables were found to be the effective risk factors for CSU.

Conclusion: MPV and PLR were significantly higher in patients with CSU than healthy controls. In our study, the diagnostic values of MPV and PLR were higher compared to ELR. However, more comprehensive studies are needed on this subject.

Abbreviations: CU: chronic urticaria; CSU: chronic spontaneous urticaria; ELR: eosinophil-lymphocyte ratio; PLR: platelet-lymphocyte ratio; MPV: median platelet volume; NLR: neutrophil-lymphocyte ratio; PPV: positive predictive value; NPV: negative predictive value; SD: standard deviation; ROC: Receiver Operating Characteristic; CI: confidence interval

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