

Dr.İşıl Kalan¹, Dr Şenay Arıkan Durmaz¹, Dr Şeyma Yavuz², Dr.Ayşe Çarlıoğlu³, Dr.Ramazan Coşar², Dr.Aydın Çifci²

¹Kırıkkale University Faculty Of Medicine, Department of Endocrinology, Kırıkkale, Turkey

²Kırıkkale University Faculty Of Medicine , Department of Internal Medicine , Kırıkkale, Turkey.

³Kırıkkale University Faculty Of Medicine, Department of Dermatology, Kırıkkale, Turkey.

Introduction and Aim: : Mean platelet volume (MPV) is the measure of platelet size. MPV possibly is a simple way to estimate platelet activity.

Mean platelet volume (MPV) is considered a new indicator of atherosclerosis. Activated platelets and subclinical inflammation predispose to create for atherosclerotic heart disease. Larger platelets are metabolically more active than smaller ones and have more protrombotic potential. We have recently demonstrated that MPV levels in Hashimoto's patients tend to be higher than healthy controls even if in euthyroid state. In present study we aimed to investigate a relationship between MPV and autoimmune thyroid disease.

Material and Methods: One-hundred patients with Hashimoto thyroiditis (HASH) [58 euthyroid Hashimoto thyroiditis (EHASH) (mean age 43.4±12.4 year)] and 42 hypothyroid (HPHASH) (mean age 46.7±15.5 year)] and 81 patients with Graves disease (GD) (mean age 38.8±13.5 year) who referred our endocrinology outpatient clinic due to high thyroid autoantibodies as antithyroid peroxidase(Anti-TPO) and/or antithyroglobuline(Anti-Tg) and/or TSH receptor antibody were included in the study. Fifty-seven (age-matched 46.4 ±11.6 year) euthyroid control subjects were taken into the study. All study population were evaluated by hormonal and platelet parameters.

Results: Serum Anti-TPO levels in all study groups (EHASH, HPHASH, GD) were significantly higher than those control subjects (p=0,01, p=0,0001, p=0,0001, respectively). The MPV of patients with EHASH, HPHASH, GD were also found significantly higher than control group (p=0,046, p=0,044, p=0,0001, respectively). No statistically significant differences were found between the other parameters such as the platelet count, platelet distribution width and plateletcrit. We found that MPV increased independently of presence of age, sex and TSH in chronic autoimmune thyroid diseases ($\beta=0,074$, p=0.007). There was no significant correlation between MPV and anti-TPO levels (r=0.145, p=0.027).

Discussion: Çarlıoğlu et al found that MPV levels are closely related with cardiovascular diseases in patients with euthyroid Hashimoto's thyroiditis. Euthyroid Hashimoto's thyroiditis patients have greater risk of atherothrombotic complications than healthy controls (1). Erikci et al found that patients with subclinical hypothyroidism has been found higher mean platelet volume (MPV) value than control group (2). Our findings also suggest a similar interaction between cardiovascular diseases and MPV level in all Hashimoto's thyroiditis patients. Our results suggest that patients with euthyroid, hypothyroid, hyperthyroid Hashimoto's thyroiditis have higher MPV levels than the healthy controls.

Conclusions: Our findings suggest that change of autoimmunity in thyroid gland in patients with chronic autoimmune disease may be effect on MPV level as well as tend to create cardiovascular risk because of large platelets have more metabolically active.

References:

1. Carlioglu A, Timur O, Durmaz SA, Ayhan ME. Mean platelet volume in euthyroid patients with Hashimoto's thyroiditis.
2. Erikci AA, Karagoz B, Ozturk A, Caglayan S, Ozisik G, Kaygusuz I, Ozata M. Hematology. 2009 Apr;14