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Mean platelet volume and the ratio of mean platelet volume / platelet count in acute rheumatic fever

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Objective: Acute rheumatic fever (ARF) is an endemic disease especially in developing countries. Due to an autoimmune response to group B streptococcus throat infection ARF develops in susceptible children. Mean platelet volume (MPV) reflects the platelet size and the rate of platelet production. It is important in cardiovascular events and rheumatic diseases. MPV/platelet count ratio was detected more sensitive than MPV alone in patients with hepatocellular carcinoma, deep vein thrombosis and myocardial infarction. The aim of this study was to investigate the alterations in MPV and MPV/platelet count ratio at the active and remission periods of ARF compared with healthy controls.

Methods: This study population consisted with 70 ARF patients and age - gender matched 70 healthy controls. In all subjects, complete blood count; including hemoglobin, white blood cell count (WBC), platelet count, MPV and C-reactive protein (CRP), erythrocyte sedimentation rate (ESR) were measured at the active stage and during the remission period in comparison with healthy subjects.

Results: There was no statistically significant difference between the ARF and control groups for the sex and age ($p>0.05$). Forty-one patients of ARF had carditis. ARF patients at the active stages had significantly higher WBC, CRP and ESR values ($p<0.05$). Although no significant difference was observed in MPV between the groups ($p>0.05$); MPV/platelet count ratio was decreased at the active stage and increased again at the remission period as a similar the healthy controls ($p<0.001$).

Conclusion: We did not find any relationship between MPV and ARF. However decreased MPV/platelet count ratio was detected at the active stage of ARF. The present findings emphasize the association between MPV/platelet count ratio and ARF. MPV/platelet count ratio may be used to determine activity of ARF disease.