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# Clinical Evaluation of Neutrophil to Lymphocytes Ratio and Platelets to Lymphocytes Ratio in Immune Thrombocytopenic Purpura

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**Abstract :** Background: Immune thrombocytopenia (ITP) is an autoimmune disorder. Besides platelets counts, immature platelets fraction (IPF) can be used as tool to predict megakaryocytic activity in ITP patients. The clinical biomarkers like Neutrophils to lymphocytes ratio (NLR) and platelet to lymphocytes ratio(PLR) predicts inflammation and can be used as prognostic markers.The present study was planned to assess the ratios in ITP and their utility in predicting prognosis after treatment. Methods: A total of 111 patients of ITP with same number of healthy individuals were included in this case control study during the period of January 2015 to December 2017.All the ITP patients were grouped according to guidelines of International working group of ITP. A 3cc blood was collected in EDTA tube and blood parameters were evaluated using Sysmex 1000 analyzer.The ratios were calculated by using absolute counts of Neutrophils,Lymphocytes and platelets.The significant (p=<0.05) difference between ITP patients and healthy control groups was determined by Kruskal wallis test, Dunn's test and spearman's correlation test was done using SPSS version 23. Results: The significantly raised total leucocytes counts (TLC) and IPF along with low platelets counts were observed in ITP patients as compared to healthy controls.In ITP groups,very low platelet count with median and IQR of 2(3.8)3x109/l with highest mean and IQR IPF 25.4(19.8)% was observed in newly diagnosed ITP group. The NLR was high with prognosis of disease as higher levels were observed in P-ITP. The PLR was significantly low in ND-ITP ,P-ITP, C-ITP, R-ITP and compared to controls with p=<0.001 as platelet were less in number in all ITP patients. Conclusion: The IPF can be used in evaluation of bone marrow response in ITP. The simple, reliable and calculated NLR and PLR ratios can be used in predicting prognosis and response to treatment in ITP and to some extend the severity of disease.

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