

Nitric Oxide and Blood Based Ratios as Promising Immuno-Markers in Patients with Complicated Crohn's Disease: Benefits for Predicting Therapy Response

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Abstract : Crohn's Disease (CD) is a relapsing-remitting inflammatory bowel disease with a progressive course. The aim of our study was to evaluate the relationship between the immunomarkers: Nitric Oxide (NO), pro-inflammatory cytokines, and blood count-based ratios and the outcome of corticosteroid or anti-TNF- α therapy in patients with complicated Crohn's Disease. In this context, we evaluated the NLR as the ratio of neutrophil count to lymphocyte count, PLR as the ratio of platelet counts to lymphocyte count, and MLR as the ratio of monocyte count to lymphocyte count in patients and controls. Furthermore, we assessed NO production by the Griess method in plasma along with iNOS and NF- κ B expression by immunofluorescence method in intestinal tissues of patients and controls. In the same way, we evaluated plasma TNF- α , IL-17A, and IL-10 levels using ELISA. Our results indicate that blood count-based ratios NLR, PLR, and MLR were significantly higher in patients compared to controls. In addition, increased systemic levels of NO, TNF- α , and IL-17A and colonic expression of iNOS and NF- κ B were observed in the same patients. Interestingly, the high ratio of NLR and MLR, as well as NO production, was significantly decreased in treated patients. Collectively, our findings suggest that Nitric Oxide, as well as the blood count-based ratios (NLR, PLR, MLR), could constitute useful immuno-markers in complicated Crohn's Disease, predicting the response to treatment

Keywords : complicated crohn's disease, nitric oxide, blood count-based ratios, treatments, pro-inflammatory cytokines

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