IMMUNOLOGICAL DYSREGULATION AS A MARKER OF DISEASE SEVERITY IN ACUTE ADHESIVE SMALL BOWEL OBSTRUCTION

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Objective: To evaluate cellular and humoral immune responses in patients with acute adhesive small bowel obstruction (ASBO) and determine immunological markers associated with complicated clinical course.

Materials and Methods. Fifty-six ASBO patients were examined and divided into non-operated (n=35) and surgically treated (n=21) subgroups. Flow-cytometric analysis of CD-subpopulations and serum levels of IgA, IgM, IgG, circulating immune complexes (CIC), inflammatory cytokines (IL-6, TNF-α), and adhesion molecules (ICAM-1, VCAM-1) were performed. Correlation analysis was used to determine immunopathological patterns.

Results. Surgically treated patients demonstrated a significant suppression of adaptive immunity: $CD3^+$ (58.2±5.5% vs 63.4±6.1%), $CD4^+$ (28.6±3.9% vs 34.7±4.3%), and $CD4^+/CD8^+$ ratio decline to 0.94 ($p<0.05$). A compensatory activation of innate immunity was observed, with elevated $CD16^+$ (21.4±3.6%) and $CD56^+$ cells. Humoral markers showed pronounced inflammatory activity: IL-6 (38.5±7.2 pg/ml), TNF-α (32.9±6.1 pg/ml), ICAM-1 (392±56 ng/ml), and CIC (124±22 units) were significantly higher in the surgical subgroup ($p<0.05$). Strong negative correlations between IL-6/TNF-α and $CD4^+$ or $HLA\text{-}DR^+$ levels (r from −0.39 to −0.71) indicate suppression of antigen presentation. TNF-α positively correlated with $CD8^+$ and $CD16^+$ activation (r up to +0.62), confirming escalation of systemic inflammation.

Conclusion. ASBO is characterized by a pronounced immune imbalance combining adaptive immune suppression with hyperactivation of innate and

humoral responses. Elevated IL-6, TNF-α, ICAM-1, and CIC levels, together with low $CD4^+/CD8^+$ ratio and reduced $HLA\text{-}DR^+$ expression, reflect the severity of the inflammatory process and can serve as potential biomarkers for predicting complicated disease course.