IMMUNOBIOCHEMICAL MARKERS IN CHRONIC PURULENT RHINOSINUSITIS IN COMBINATION WITH METABOLIC SYNDROME

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Relevance: Chronic rhinosinusitis (CRS) is a widespread condition influenced by various factors, including environmental pollution, allergies, and immune dysregulation. The presence of metabolic syndrome (MS) worsens the prognosis and exacerbates the course of the disease by increasing the inflammatory response and complicating management strategies. Therefore, studying the interaction between CRS and MS is essential for developing targeted therapeutic approaches.

Purpose of the Study: The research aims to explore the differences in immunobiochemical markers in patients with chronic purulent rhinosinusitis (CPRS), focusing on the presence or absence of metabolic syndrome. The study also examines how these markers could influence the disease's progression and prognosis.

Materials and Methods: The study included 127 patients with chronic purulent rhinosinusitis, of which 52 had CPRS without metabolic syndrome, 41 had CPRS with metabolic syndrome, and 20 formed the control group. The levels of cytokines (IL-4, IL-6, IL-8), C-reactive protein (CRP), superoxide dismutase (SOD), and oDNA were analyzed from both blood serum and nasal washes using ELISA.

Results: Patients with CPRS and metabolic syndrome had significantly elevated levels of IL-4, IL-6, IL-8, and CRP compared to the control group and those without MS. Notably, IL-4 and IL-8 were 3.78 and 2.41 times higher, respectively, in the nasal washes of patients with CPRS and MS. Conversely, SOD levels were significantly reduced, particularly in patients with CPRS and MS, indicating compromised antioxidant defense.

Conclusions: The presence of metabolic syndrome in patients with chronic purulent rhinosinusitis leads to a more severe inflammatory response, marked by elevated cytokines and reduced antioxidant activity. These findings highlight the need for personalized therapeutic approaches targeting both the underlying metabolic and immune dysfunctions in this patient population.

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