

THE ROLE OF METABOLIC SYNDROME IN AGGRAVATING CHRONIC PURULENT RHINOSINUSITIS: IMMUNOBIOCHEMICAL INSIGHTS

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Relevance: Metabolic syndrome (MS) is a growing health concern and has been shown to worsen inflammatory diseases, including chronic purulent rhinosinusitis (CPRS). Patients with both CPRS and MS face increased risks of complications, which can lead to a more severe clinical course. Understanding how MS contributes to immune system dysregulation in CPRS is essential for improving disease management.

Purpose of the Study: The purpose of this study is to evaluate the impact of metabolic syndrome on immunobiochemical markers in patients with chronic purulent rhinosinusitis and to compare the findings with those in patients without metabolic syndrome.

Materials and Methods: The study analyzed immunobiochemical markers in 93 patients with chronic purulent rhinosinusitis: 52 without metabolic syndrome, 41 with metabolic syndrome, and a control group of 20 healthy individuals. Levels of cytokines (IL-4, IL-6, IL-8), C-reactive protein (CRP), SOD, and oDNA were measured using ELISA.

Results: Patients with CPRS and metabolic syndrome showed significantly higher levels of IL-4, IL-6, and IL-8 in both blood serum and nasal washes compared to those without metabolic syndrome. In particular, IL-8 levels in nasal washes were 2.41 times higher in patients with MS. Additionally, SOD levels were notably lower in patients with MS, indicating reduced antioxidant capacity and a higher inflammatory burden.

Conclusions: The findings demonstrate that metabolic syndrome significantly exacerbates chronic purulent rhinosinusitis by amplifying inflammatory cytokine production and reducing the body's antioxidant defense. These results suggest that metabolic syndrome should be a key consideration in the diagnosis and treatment planning for CPRS patients, as it may necessitate more aggressive or targeted interventions.

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