

CLINICAL AND MORPHOLOGICAL FEATURES OF POST-COVID SYNDROME IN PATIENTS WITH CHRONIC DISEASES

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Abstract

Post-COVID syndrome is a complex condition characterized by persistent symptoms after acute SARS-CoV-2 infection. Patients with chronic diseases are at higher risk of prolonged recovery and multisystem complications. The aim of this study was to analyze clinical and morphological features of post-COVID syndrome in patients with chronic comorbidities. The review demonstrated that persistent inflammation, endothelial dysfunction, microvascular injury, and immune dysregulation contribute to respiratory, cardiovascular, neurological, and metabolic disturbances. Recognition of these mechanisms is important for long-term follow-up and rehabilitation of affected patients.

Keywords: post-COVID syndrome, chronic disease, morphology, inflammation, clinical manifestations

Introduction

COVID-19 has had long-term consequences beyond the acute phase of infection. Many patients continue to experience fatigue, dyspnea, cognitive impairment, chest discomfort, sleep disorders, and reduced exercise tolerance after apparent recovery. This condition is commonly referred to as post-COVID syndrome. Chronic diseases such as diabetes mellitus, cardiovascular disorders, chronic obstructive pulmonary disease, obesity, and kidney disease increase the risk of persistent complications. Morphological studies suggest that post-COVID syndrome may be associated with chronic inflammatory changes, vascular injury, and tissue remodeling in several organs.

This topic is relevant because modern medical practice requires evidence-based analysis, early diagnosis, and interdisciplinary approaches. A deeper understanding of pathogenetic and clinical mechanisms allows healthcare professionals to improve prevention, monitoring, and treatment outcomes.

Materials and Methods

A review of clinical and pathological literature related to post-COVID syndrome was conducted. Sources discussing chronic disease comorbidity, inflammatory mechanisms, endothelial dysfunction, pulmonary and cardiovascular changes, and rehabilitation outcomes were analyzed. Clinical manifestations and morphological alterations were grouped according to organ systems.

Results

Patients with chronic diseases demonstrated more frequent and prolonged post-COVID manifestations. Respiratory symptoms were associated with interstitial changes, impaired gas exchange, and residual inflammation. Cardiovascular manifestations included endothelial dysfunction, microthrombotic changes, and myocardial stress. Neurological symptoms were linked to neuroinflammation and microvascular injury. Patients with diabetes and obesity showed increased inflammatory activity and slower recovery.

Discussion

Post-COVID syndrome is a multifactorial condition, and its course is strongly influenced by pre-existing chronic diseases. Persistent immune activation and endothelial damage may explain long-term organ dysfunction. Morphological changes are often subtle but clinically significant. Integrated care involving pulmonologists, cardiologists, endocrinologists, neurologists, and rehabilitation specialists is necessary. Early detection of risk groups may reduce disability and improve quality of life.

The reviewed evidence indicates that practical implementation depends on clinical context, patient characteristics, available resources, and professional competence. Therefore, future studies should include larger cohorts, standardized protocols, and long-term follow-up to improve reliability of conclusions.

Conclusion

Post-COVID syndrome in patients with chronic diseases is associated with persistent clinical symptoms and morphological alterations in multiple organ systems. Chronic inflammation, endothelial dysfunction, and immune imbalance play central roles in disease persistence. Long-term monitoring and individualized rehabilitation are essential for improving outcomes.

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