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MUSCULOSKELETAL PATHOLOGIES IN PATIENTS WITH COVID-19, ITS INFLUENCE ON OSTEOARTHRITIS: THE ROLE OF VITAMIN D AND HYPOCALCAEMIA

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ABSTRACT

The COVID-19 pandemic of the Severe Acute Respiratory Syndrome Coronavirus-2 has brought healthcare to the forefront, making prevention and treatment strategies a global priority. The relationship between COVID-19 infection and factors such as Vitamin D and calcium levels—particularly in patients with osteoarthritis—remains a topic of active investigation. While coronavirus infections are primarily known for respiratory symptoms, skeletal complications and risks have also been reported.

Although much attention has focused on the respiratory effects of COVID-19, its impact on the musculoskeletal system has also been significant. Patients with COVID-19 have reported a range of musculoskeletal symptoms, which can be both direct (resulting from viral infection) and indirect (related to prolonged inactivity, immune responses, or treatment protocols). Among these, osteoarthritis and conditions related to calcium and vitamin D deficiency have garnered attention in the literature. Epidemiological data from the SARS pandemic also reported myalgias, muscle weakness, osteoporosis, and osteonecrosis as common complications in patients with moderate to severe disease.

We reviewed the literature on investigations of musculoskeletal diseases in COVID-19 patients, as well as the role of vitamin D and calcium. The keywords were used to search for data in international databases. A total of 69 relevant sources were selected. Although long-term follow-up studies have not yet been completed, early research has suggested that certain COVID-19 patients experience significant musculoskeletal impairment. The objective of this article is to summarize known musculoskeletal pathologies in patients with SARS or COVID-19 and to combine this with computational modeling and biochemical signaling studies to predict musculoskeletal cellular targets and long-term consequences of the SARS-CoV-2 infection.

KEYWORDS: COVID-19, osteoarthritis, vitamin D, calcium

INTRODUCTION

SARS (Severe Acute Respiratory Syndrome) is a type of acute respiratory syndrome. The pandemic of the Coronavirus-2 (SARS CoV- 2) has moved

healthcare front and center, making preventive and treatment methods a top global concern. The morbidity and mortality associated with Coronavirus

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