

EDITORIAL**COVID 19 – THINKING BEYOND RESPIRATORY COMPLICATIONS****Dr. Deepak Anap***Professor and HOD in Dept. of PT in Musculoskeletal Sciences, Dr. Vithalrao Vikhe Patil Foundation's College of Physiotherapy, Ahmednagar*

The COVID-19 pandemic in India is a part of the worldwide pandemic of coronavirus disease 2019 (COVID-19) caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). The first case of COVID-19 in India, which originated from China, was reported on 30 January 2020.¹ Currently, India has the largest number of confirmed cases in Asia.²

The post COVID cases reporting to out patient departments in tertiary care hospital situated in rural Maharashtra has shown climbing rate of musculoskeletal symptoms. Muscle soreness and painful weight bearing joints are common symptoms among post COVID-19 patients. But for some people, symptoms are more severe, long-lasting, including rheumatoid arthritis flares, Osteoarthritis flare and even few have reported with avascular necrosis of hip joint. Though the association has not established between COVID - 19 and musculoskeletal symptoms, a new Northwestern Medicine study has, for the first time, confirmed and illustrated the causes of these symptoms through radiological imaging. As per the corresponding author Dr. Swati Deshmukh, the COVID virus can trigger the body to attack itself in different ways, which may lead to rheumatological issues that require lifelong management.³

Many author's have recently published articles highlighting the reasons for musculoskeletal issues in post COVID patients. Extended ventilator times are also known to induce proinflammatory conditions that lead to muscle and bone frailty, which can reduce overall quality of life.⁴ In addition to directly infecting cells outside of the respiratory tract, the inflammatory response in the airway can also lead to systemic inflammation that can affect musculoskeletal system along with other systems.⁵ COVID infection leads to deficits in both muscle strength and endurance, likely due to the

proinflammatory effects of the viral infection and the deconditioning that occurs during the convalescent period. Elevated levels of IL-1 β and IL-6 can induce muscle fibroblast activity and lead to fibrosis, which could impair muscle force production and increase injury susceptibility.⁶ Additionally, corticosteroids were extensively used to limit acute inflammation in patients with SARS⁷, and these drugs can directly induce muscle atrophy and weakness⁸. Though the U.S. Centers for Disease Control and Prevention (CDC) advises against the routine use of corticosteroids for COVID-19, in India the drug was used as mainstay of treatment. Bone mineral density (BMD) reduced substantially dependent on the extent and duration of treatment with corticosteroids, which were a mainstay therapy that attempted to reduce inflammation during the initial infection and subsequent early rehabilitation and recovery period⁹.

Osteonecrosis has been frequently reported in patients with severe COVID, with rates from 5% to 58%¹⁰. The majority of these cases involve the femoral head, although the knee, humeral head, talus, calcaneus, and other anatomical sites were affected in lower frequencies¹⁰. This may be the reason why AVN was noticed in many cases reported to out patient department. Temporomandibular pain was also reported by many recovering cases. This issue is also under study to find out whether overuse of steroids have lead to TMJ disorders.

Musculoskeletal Physiotherapist can play important role in rehabilitation of these patients. Aerobic and resistance exercise program has shown effectiveness in post COVID cases. Evidences are lacking in explaining role of musculoskeletal conditions and extensive research is required in Indian set up.

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We conclude that as a healthcare professionals we should assess the patient as whole not restricting to one system. COVID -19 can affect multiple systems including Musculoskeletal system leading to long term affection of quality of life and disability.

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