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LETTER TO THE EDITOR

What can we learn about corticosteroid therapy as a treatment for COVID-19?

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To the Editor,

Corticosteroid therapy is widely used to treat patients with COVID-19 in China [1, 2], but its efficacy remains controversial.

The side effects and long-term complications of corticosteroids, especially in the skeletal system, where corticosteroids can cause osteonecrosis and osteoporosis, should be considered by doctors and patients.

Corticosteroids are widely used in the treatment of patients with SARS and MERS. A meta-analysis of data from 1137 patients with SARS showed clear evidence of a relationship between osteonecrosis and the cumulative dose and treatment duration of corticosteroids. No sex differences between male and female patients were found in the development of corticosteroid-induced osteonecrosis. The cumulative dose and treatment duration of corticosteroids are major risk factors for the development of osteonecrosis in SARS patients [3]. To date, the quality of life of some patients who survived SARS has been affected by corticosteroid-induced osteonecrosis.

Glucocorticoids can profoundly affect bone cell function and mineral metabolism, which leads to the development of low bone density and osteoporosis. Clinical studies have shown that most of this bone loss occurs during the initial periods of exposure to corticosteroids and that even a modest dosage of corticosteroids, which is generally considered to be in the range of physiological replacement, may increase the risk of fractures [4]. Studies of SARS patients treated with corticosteroids showed that factors affecting bone mineral density include age, the sum of corticosteroid doses and the duration of treatment [5].

Therefore, to prevent the occurrence of side effects, some measures should be taken before and after COVID-19 patients are treated with corticosteroids. First, clinicians should question the patient to determine if there is any discomfort, such as joint pain, and use magnetic resonance imaging (MRI) to detect osteonecrosis, especially necrosis of the femoral head, if necessary. Second, the patient's blood calcium, phosphine, 25-hydroxyvitamin D, parathyroid hormone (PTH), and bone density should be monitored. Third, adequate dietary intake of calcium (1000 mg per day) and vitamin D (600 to 800 IU) and other appropriate treatments according to the patient's condition are routinely encouraged to prevent osteoporosis in patients beginning corticosteroid treatment [4].

Compliance with ethical standards

Competing interests No relevant disclosures.

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