Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Letter to Editors

COVID-19 patients could be at high risk for dry socket

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Dear Editor,

The severe morbidity and potential mortality in the SARS-Cov-2 induced COVID-19 patients can be largely attributed to the augmented immune response characterized as a cytokine storm [1]. Corticosteroids have been employed to suppress these aggravated immune responses in severely ill patients [2]. Excessive use of glucocorticoids has been shown to increase the plasma levels of von Willebrand factor (vWF). As vWF is produced and stored in the endothelial cells, their presence in excess in plasma indicates potential endothelial cell damage [3]. vWF is essential for the aggregation and adhesion of platelets, thus its loss due to the glucocorticoids induced endothelial damage also increases the risk of thrombosis and avascular necrosis [3]. Recent studies on COVID-19 patients have shown to corroborate the relatively higher risk of avascular necrosis associated with corticosteroids [4–6]. Siukan Law et al [4] noted that the use of high doses of corticosteroids increased the risk of the appearance of avascular necrosis of the joint and hip. Nikita Mehta et al [5] observed that corticosteroids predispose to avascular necrosis and renal suppression, thus suggested that the use of corticosteroids should be restricted only in cases with refractory septic shock, and acute respiratory distress syndrome. Zhenwei Yang et al. [6] revealed that corticosteroid use increases the risk of osteonecrosis. Yong Xiong et al. [7] criticized that glucocorticoids impaired antibody responses delayed viral clearance, increased the risk of avascular necrosis and osteoporosis.

In addition to the corticosteroids, the SARS-Cov-2 infection in itself can induce endothelial dysfunction producing excess thrombin and fibrinolysis shutdown resulting in a state of hypercoagulability [3]. In combination with the hypoxia, the hypercoagulability increases blood viscosity and activates the hypoxia-induced transcription factor-dependent signaling, thereby further increasing the risk of thrombosis and osteonecrosis [3].

A systematic review by Daltro et al [3] assessed the association between COVID-19 and osteonecrosis. They inferred that there is sufficient evidence for a corticosteroid associated risk of avascular necrosis in COVID-19 patients. Given the predisposition for thrombosis and associated osteonecrosis, recovered COVID-19 patients, especially those treated with corticosteroids, could potentially be at a high risk of developing dry socket post-extraction. Thus, all recovered COVID-19 patients should be screened for suspected avascular necrosis with magnetic resonance imaging before any surgical intervention.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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Lakshmi Shetty[a,*], Shruti Nahar[b], Trivina Domah[a], A. Thirumal Raj[c]
[a] *Department of Oral and Maxillofacial Surgery, Dr. D. Y. Patil Dental College and Hospital, Dr. D. Y. Patil Vidyapeeth, Pune, India*
[b] *Dr. D. Y. Patil Dental College and Hospital, Dr. D. Y. Patil Vidyapeeth, Pune, India*
[c] *Department of Oral Pathology and Microbiology, Sri Venkateswara Dental College and Hospital, Chennai, India*

[*] Corresponding author.
E-mail addresses: lacchu33@yahoo.co.in (L. Shetty), thirumalraj666@gmail.com (A.T. Raj).

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