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Ferritin in COVID-19 infection and its diagnostic significance

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COVID-19 caused by SARS-CoV-2 (severe acute respiratory syndrome corona virus-2) is the major health issue facing the entire world at present. There are several pathological mechanism associated with the infection which aggravates to significant morbidity and mortality among the population. Of the several complications, hypercoagulation due to fibrin clot formation is one of the complications often seen in patients suffering from COVID-19 infection. The link of iron with hypercoagulation and related events are always a matter of discussion in the scientific world. Yet another cause of disseminated intravascular coagulation seen in these patients is cytokine storm, which occurs due to release of pro inflammatory signalling molecules as a result of increased inflammation due to depletion of iron stores. The viral attack can destroy the haemoglobin; release the iron content by separating it from the heme. This free iron in the blood will be able to produce free radicals which can convert fibrinogen into fibrin clots. More over iron could elicit oxidative stress which can subsequently lead to increased erythrocyte viscosity and thrombosis. Further ferritin, the iron storing protein will actively get released and can lose its inner iron content leading to increased free iron in circulation. It was evident that iron overload was one of the critical factor which determines the immunological processes leading to a type of cell death referred as ferroptosis. This review discussed with the mechanism involved in the release of iron and cytokine storm along with the diagnostic significance of ferritin in COVID-19 infection.

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