

Corelation between Severity of COVID-19 Infection and a Low Platelet Count

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As the COVID-19 infection continues its unrelenting spread throughout the world, medical science is striving to determine which biomarkers could serve to quickly and accurately determine the severity of COVID-19 infection in individual patients. Platelet counts is one such biomarker which could accurately determine the severity of COVID-19 infection.

Low platelet counts occurring in seriously-ill patients is indicative of severe multi-organ dysfunction or physiologic decompensation rather than a hematologic cause, resulting in the development of intravascular coagulopathy and consequently disseminated intravascular coagulation (DIC) [1].

In patients with severe COVID-19 infection, the mechanism for thrombocytopenia is likely multicausal. In COVID-19 infection, as the lungs may be a site of platelet release from fully mature megakaryocytes, a decrease or physiologic alteration in the pulmonary capillary bed may lead to abnormal platelet defragmentation [2]. The coronaviruses may also directly infect the bone marrow causing abnormal hematopoiesis or trigger an auto-immune response against blood cells [2,3].

A meta-analysis done recently [4] looked at a total of nine studies from both Singapore and China, on the co-relation between low platelet counts and the severity of the COVID-19 infection.

In this analysis it was found that patients with severe COVID-19 infection had significantly lower platelet counts as compared to patients with mild COVID-19 infection, thereby indicating that platelet counts could be used as a determining diagnostic indicator for severe COVID-19 infections.

In addition, in data from three studies it was found that the platelet counts were significantly lower in patients who died from the disease as compared to those who recovered.

Four of the studies also found that patients with thrombocytopenia had a five-times greater risk of developing severe COVID-19 infection, when compared to COVID-19 patients with normal platelet counts.

This important co-relation between severity of COVID-19 infection and a low platelet count has helped physicians decide which patients are more likely to develop severe infection, thereby determining the future course of management quickly.

However, there are some initial drawbacks to the observations in these studies, namely, the differing definitions of "severe COVID-19 infection," as well as the different levels of low platelet counts determining the severity of COVID-19 infection in each study.

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