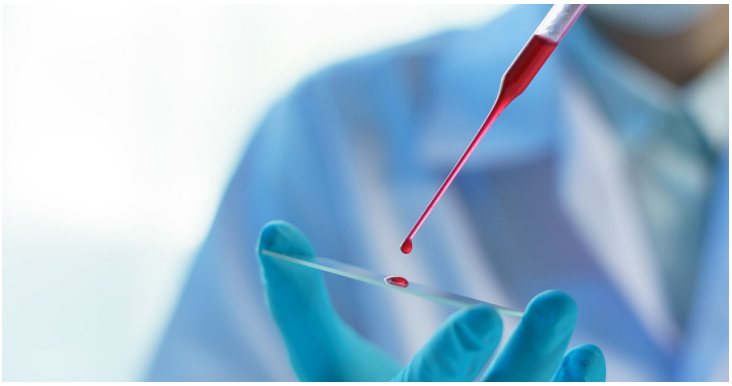
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Singapore discovers blood markers to predict COVID-19 severity or risk

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The study identified biomarkers (calprotectin) and cellular markers (monocyte and neutrophil subsets) in the blood of COVID-19 patients that could potentially predict COVID-19 progression



Researchers from A*STAR's Singapore Immunology Network (SIgN), together with international collaborators have discovered blood markers that could predict COVID-19 severity and/or risk in patients. The study was published in the scientific journal, Cell on 17 September 2020.

The study identified biomarkers (calprotectin) and cellular markers (monocyte and neutrophil subsets) in the blood of COVID-19 patients that could potentially be used as predictors or risk factors of progression from mild to severe forms of the disease. Additionally, it was proven that calprotectin plasma level and a routine flow cytometry assay detecting decreased frequencies of non-classical monocytes, could identify patients who have developed a severe form of COVID-19, suggesting a potential predictive value for evaluation.

This may mean new therapeutic avenues for the treatment of COVID-19, with findings that can potentially translate into a kit that predicts the severity of the disease in patients.

Dr Florent Ginhoux, Senior Principal Investigator, SIgN and co-last author of the study said, "Interestingly, we observed immature blood neutrophils with an immunosuppressive profile that accumulated in the blood and lungs, suggesting emergency myelopoiesis seen in stress and pathological conditions. This suggests that SARS-CoV-2 infection can lead to a complete and systemic dysregulation of the immune response but also of the process that generates the immune cells, especially myeloid cells that include monocyte and neutrophils, leading to severe COVID. Our study integrates frequencies of non-classical monocytes and immature neutrophils with calprotectin plasma levels as robust biomarkers of COVID-19 severity and suggests potential therapeutic strategies targeting calprotectin to alleviate severe COVID-19."