Staying ahead of cytokine storm

Testing for key inflammation markers

As fluid and damage accumulate in the lungs, it becomes more and more difficult for the lungs to absorb oxygen and exchange it for carbon dioxide.

COVID-19 pneumonia is caused by inflammation and fluid accumulation in the alveoli, the site of oxygen absorption and diffusion into the blood stream.

The SARS-CoV-2 virus utilizes the ACE-2 receptor to bind to alveolar cells which are rich in ACE2 receptors. ACE2 receptors are also found in multiple organs and blood vessels.

Early detection of inflammation markers can indicate the onset of a cytokine storm and assist clinicians with timely interventions.

The onslaught of cytokines can cause multi-organ failure and disseminated intravascular coagulation, both contributing to death.

1 of 5 COVID-19 patients develop severe pneumonia.

~5% of severe COVID-19 patients develop a systemic dysregulated cytokine response.

Key Marker

IL-6

IL-18  TNF-α  IL-8

IL-2 R  IL-10

High serum levels of pro- and anti-inflammatory cytokines were found in patients with severe COVID-19.3

Extreme immune response that can cause wide-scale cellular and organ tissue damage.

Dysregulated cytokines can cause fluid leakage from capillaries generating the formation of multiple blood clots.

IL-6 levels were higher in COVID-19 patients with severe disease.5

Other useful lab tests for cytokine storm patients:

ALT  AST  BIL  LDH  CRE  KIN

PT/INR  D-DIMER  PCT  CREA  CYS  C

SAA  CTNI  CRP  FERR

IL-6 activity blockers such as tocilizumab, sarilumab and others.

IL-6

IL-10

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Some or all uses of the analytes described have not been approved or cleared by the FDA.