

## Cytokine Storm in nCOVID-19

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People often think of external microbes as their worst threat during an outbreak of viral infection, but the body's own immune system is would-be more lethal. When the body identifies foreign microorganisms indicating an infection, immune system may go awry, i.e. it might exaggerate its response at the site of infection. It may recruit profusely antibodies with uncontrolled release of proinflammatory cytokines to the infection site that they collect in a "cytokine storm".

Cytokine storms are concomitant with a wide variety of infectious and noninfectious diseases. This term was popularized largely in the milieu of avian H5N1 influenza virus infection, bringing the term into popular media.

In the case of Covid-19, it spreads deeper into the lungs where it targets a receptor called the Angiotensin Converting Enzyme receptor, infecting type II pneumocytes in the alveolar walls, yet can lead to indistinguishable clinical syndromes of acute lung injury (ALI) with respiratory failure, sepsis, and a cytokine storm. This of course is probably to occurs when there is a high viral load usually in the throat, enters the blood stream or moves through lymphatic system or via secretions to other organs including the lungs.

That's why some patients have a mild disease, while others need an intensive care.

In healthcare workers, their immune systems are constantly challenged by the daily exposure to viruses or bacteria carried by their patients, therefore their immune system is primed to deliver an overpowering response especially in the face of a huge viral load.

This tremendous response precisely makes them develop severe symptoms and be admitted into intensive care with persistent tissue damage without severe microbial infection in the lungs this clinical manifestations mimics sepsis syndrome.

So, you may not realize that healthcare workers are under a great burden of stress during this period as their threat is way higher than the average patient's.

To sum up, healthcare workers should wear N95 masks even though a long duration of wearing make them feel the effects of that added work of breathing at the end of the day, but masks are protecting healthcare workers who are at risk of cytokine storm.

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