

OPINION | COMMENTARY

# *The Treatment That Could Crush Covid*

Early trials show signaling cells eliminate the virus, calm the immune response and repair tissue damage.

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By Kevin Kimberlin

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More than 500 clinical trials are under way world-wide in the race to find an effective treatment for Covid-19. Everybody wants it; nobody has it—yet. But one of the most promising therapies for Covid-19 patients uses “medicinal signaling cells,” or MSCs, which are found on blood vessels throughout the body.

In preliminary studies, these cells cut the death rate significantly, particularly in the sickest patients. With a powerful 1-2-3 punch, these cells eliminate the virus, calm the immune overreaction known as a cytokine storm, and repair damaged lung tissue—a combination offered by no other drug. This type of regenerative medicine could be as revolutionary as Jonas Salk’s polio vaccine.

In one pilot study in March, doctors at Mount Sinai Hospital in New York treated a dozen severely ill Covid-19 patients on ventilators with MSCs. Two infusions modulated their hyperactive immune systems, and 83% of those patients survived. With such promising results, the team at Mount Sinai and the supplier of the cells, Mesoblast Ltd. , won Food and Drug Administration clearance and National Institutes of Health funding to conduct a randomized trial on 300 patients. The first patients in the trial received the treatment in early May.

A July 10 article in the *Lancet* reported on 13 critically ill Covid-19 patients also treated with MSCs. Eleven of the 13 patients lived—an 85% survival rate, which mirrors the results from Mount Sinai. The number of virus-fighting T-cells rose even as inflammation fell, suggesting that these cells can control the immune response as needed. In addition, chest X-rays showed that the drug repaired lung tissue, in some cases within 48 hours.

Healing tissue is essential because the cytokine battle with the Covid-19 virus is so vicious that it punches holes in the delicate lung membranes, allowing the virus to flood into the bloodstream and body cavities. These holes must be repaired, as virus leaks create some of the complications not usually associated with respiratory infections—blood clotting, heart attacks, stroke and multiple organ failure, which cause about 40% of Covid-19-related deaths. Blood-vessel density, and thereby the number of MSCs, decreases as we age, gain weight or develop diseases, which may explain why the elderly and those with chronic health conditions are faring worst.

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