

Mesenchymal stem cells-derived Extracellular Vesicles: A Promising COVID-19 Therapy?"

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Coronavirus disease 2019 (COVID-19) is a pandemic viral disease caused by severe acute respiratory syndrome coronavirus type-2 (SARS-CoV-2). Originated in Wuhan, China in December 2019, COVID-19 soon spread all around the world [1]. As per the WHO, till 4th August 2021, Globally, 200,174,883 confirmed cases of COVID-19, including 4,255,892 deaths and 3,984,596,440 vaccine doses have been administered [2].

In India, from 3 January 2020 to 6:08 pm CEST, 5 August 2021, 31,812,114 confirmed cases of COVID-19 with 426,290 deaths, reported to WHO. As of 1 August 2021, a total of 478,544,114 vaccine doses have been administered [3]. The fight is still on as the path of vaccine development is quite difficult due to the mutating nature of the COVID-19. Till now, no specific drug or antiviral therapy is available for patients with SARS-CoV-2 infection.

In Animal model, administrated with MSC-derived Extracellular Vesicles improve lung and heart injuries. In future, MSCs-derived Extracellular Vesicles could be used for the treatment of critically ill COVID-19 patients [7,4]. Recently, Mesenchymal stem cell (MSC)-derived Extracellular Vesicles can serve as an immunomodulation treatment for COVID-19 patients. Extracellular Vesicles act as a anti-inflammatory, pro-angiogenic, and immunomodulatory properties (Fig 1) that can be explored in an effort to improve the outcomes of SARS-CoV-2-infected patients [5, 6-9]. Currently, ongoing clinical trial (NCT04276987) is specifically exploring the use of MSC-derived exosomes as a therapy to treat SARS-CoV-2, and more specifically for their potential use in the treatment of ARDS and sepsis [5-9].

Authors feel MSCs-derived Extracellular Vesicles may be explored as a alternate therapeutic option for the treatment of SARS-COV-2.

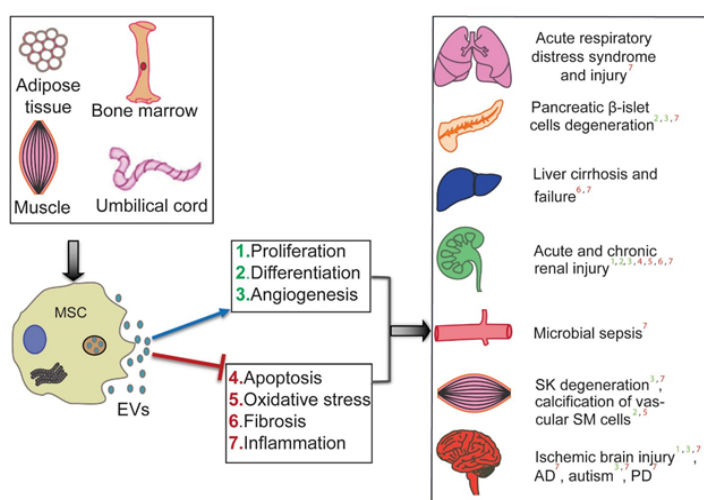


Figure 1: Clinical use of Mesenchymal Stem Cell-Derived Extracellular Vesicles [9].

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