

# Review of: "A Narrative Review on the Management of Severe COVID-19 Infection Using Stem Cell-based therapies with a Focus on the Registered Clinical Trials"

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Potential competing interests: No potential competing interests to declare.

The severity of COVID-19 symptoms may be enhanced due to underlying medical conditions. Several studies demonstrated severe COVID-19 infection can lead to innate and adaptive immune dysregulation, cytokine storms as well as the formation of fibromyxoid exudate in the respiratory alveolar, ultimately resulting in pulmonary fibrosis and ARDS as the leading cause of mortality and morbidity. Currently, there is a widespread global endeavor in finding efficient drugs or vaccines to manage COVID-19. Although some FDA-approved treatments have been introduced for COVID-19, alternative therapies might decrease the mortality rates. Various sources of pluripotent and mesenchymal stem cells as cell-based therapies have been applied on moderate to severe COVID-19 patients with acute respiratory distress syndrome, leading to positive results. Cell-based therapies by modulating the cytokine cascades and cellular apoptosis can probably inhibit tissue remodeling and subsequent end-organ damage. The present review aims to discuss the advantages of stem cell-based therapies in the treatment of COVID-19 patients and the possible challenges associated with their application. There are a number of issues.

1. Overall writing needs to be worked upon. Many statements are out of date. For example, we tend not to say in 2024 that "The emergence of SARS-CoV-2 has led to a concerning global pandemic". It is more or less a post-COVID-19 era now.
2. The flow of the introduction does not follow a logical path and the rationale to perform a review on the topic (MSCs therapy in COVID-19) should highlight advantage over drug therapy.
3. Much more subtitles should be used. Also, a section on the limitation and safety concern may be included.
4. No method section is present in the review and consequently. It is not possible to assess how the search strategy was conducted, which kind of available evidence have been selected and how the quality of available evidence has been assessed (PRISMA). Unfortunately, the manuscript is not easy to read and the absence of a clear methodology (PRISMA) for the search strategy makes the review not assessable.
5. A relevant work should be included (PMID 36075372)

