



Current status of cell-based therapies for respiratory virus infections: applicability to COVID-19

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It is imperative to better comprehend the rationale and underlying data that both support and refute effectiveness of MSCs in respiratory virus infections, and to define the targeted patient population and potential cell therapy approaches for COVID-19 <https://bit.ly/2VbmYXs>

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ABSTRACT The severe respiratory consequences of the coronavirus disease 2019 (COVID-19) pandemic have prompted urgent need for novel therapies. Cell-based approaches, primarily using mesenchymal stem (stromal) cells (MSCs), have demonstrated safety and possible efficacy in patients with acute respiratory distress syndrome (ARDS), although they are not yet well studied in respiratory virus-induced ARDS. Limited pre-clinical data suggest that systemic MSC administration can significantly reduce respiratory virus (influenza strains H5N1 and H9N2)-induced lung injury; however, there are no available data in models of coronavirus respiratory infection.

There is a rapidly increasing number of clinical investigations of cell-based therapy approaches for COVID-19. These utilise a range of different cell sources, doses, dosing strategies and targeted patient populations. To provide a rational strategy to maximise potential therapeutic use, it is critically important to understand the relevant pre-clinical studies and postulated mechanisms of MSC actions in respiratory virus-induced lung injuries. This review presents these, along with consideration of current clinical investigations.