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LETTER TO THE EDITOR

# Mesenchymal stem cells in the treatment of coronavirus-induced pneumonia (COVID-19)

## Células-tronco mesenquimais no tratamento da pneumonia induzida pelo coronavírus (COVID-19)

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Dear Editor,

Stem cell therapy has been investigated by a number of basic, pre-clinical and clinical studies, and these studies have proved that stem cells are safe and effective in the treatment of many medical conditions and diseases.[1-4] A study including 10 patients with confirmed diagnosis for coronavirus 2019 (COVID-19), and pneumonia due to infection by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), reported significant improvement in symptoms of all patients treated with mesenchymal stem cells (MSCs) with no adverse effects. Of these patients, 7 were treated with intravenous concentration of $1x10^6$ cells per kilogram of body weight and 3 were treated with placebo. Patients were followed-up for 14 days. Results observed included a significant reduction of chest infiltration, reduction of proinflammatory cytocines including tumor necrosis factor alpha (TNF-α), and an increase of peripheral lymphocytes rate with phenotype recovering of $CD4^+$ T cell count and dendritic. In addition, an increase was observed of anti-inflammatory gene expression and trophic factors.[5] Although further studies including more patients are warranted, data published in the literature so far suggest that MSCs is safe and effective for treatment in patients with SARS-CoV-2 pneumonia.[5]

Chinese Clinical Trial Registry (ChiCTR2000029990).

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