

International E-Conference on

# PUBLIC HEALTH

April 19-20, 2021 | Webinar

## Stem cell and Exosomes: Better candidates for treating COVID-19

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SARS-CoV-2 emerged in Wuhan city in China has spread far and wide as COVID-19. Being highly transmissible and the high survival rate has resulted in more than 30 million cases and more than 10 million deaths around the world. Vaccine trials are still underway, and scientists and physicians are trying various strategies to alleviate the symptoms of COVID-19. Several antiviral drugs and convalescent plasma infusion are effective in improving the symptoms. However, COVID 19 symptoms and severity exhibits person to person variation suggestive of intense large-scale clinical trials to confirm the potency of any treatments. Patients with COVID 19 present with a plethora of symptoms varying from mild to severe. The complex pathophysiology of COVID 19 demands treatment with a pleiotropic agent rather than a single target agent. Cytokine and chemokine storms are central to the disease progression in these patients. Stem cells and stem cell derived exosomes have earlier shown favorable therapeutic effects in preclinical studies of acute lung injury and inflammatory diseases. Exosomes contain within it a diverse array of chemokines, growth factors, miRNAs facilitating them as mediators for paracrine and endocrine signaling. Studies using exosomes from bone marrow Mesenchymal Stem Cells (MSCs) (ExoFlo) have been shown to downregulate the cytokine storm and improved health in COVID 19 patients. The anti-inflammatory and immunomodulatory effects of MSCs and MSC derived exosomes are the key mechanisms by which they exert protection. The superior safety profile, stability, and scalability make exosomes a practical therapeutic option for COVID 19.

**Keywords:** COVID 19, stem cells, exosomes, SARS-CoV-2, Mesenchymal Stem Cells, nanovesicles

### Biography:

Sherin Saheera completed her Ph.D. from Sree Chitra Tirunal Institute for Medical Sciences and Technology, Kerala, India in 2017 and went to the USA to pursue her postdoctoral studies. After 1 year of postdoc at the University of Alabama, she is currently working as a Postdoctoral Associate at University of Massachusetts Medical School, USA since 2019 January. She has over 15 publications in peer-reviewed high-impact international journals and has been serving as an editorial board member and reviewer for reputed journals. She presented papers at several national and international conferences and has got many accolades.