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Guest Editorial

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Dear Covid Survivors,

I wish to emphasize upon the importance of optimism, while you and I seem to have dodged the 2nd wave for now! This pandemic has taught us life lessons while necessitating a revolution in scientific breakthroughs. The novel human coronavirus pandemic has created a sense of global panic and the scientific community; comprising of pharmaceutical and biotech enterprises, medical practitioners, institutions and academia have responded by advancing treatment and prevention strategies. Pyrexia, sepsis, acute respiratory distress syndrome (ARDS), and multiple organ failure are observed to develop as secondary debilitation is turning out to be fatal. With the first line of treatments ending up ineffective and unable to save the patient from dying, mesenchymal stem cells (MSCs), by virtue of their proven potent immune-modulatory ability, with the established role in repair, homing in lungs, have emerged as a solution to be applied for mitigating the adverse cytokine storm and reducing morbidity and mortality in COVID-19.

Now, in this editorial, I would like to highlight the prospective role of next generation biobanks in addressing this gory pandemic that has engulfed millions while mentioning the other MSC related discoveries that have reached the clinics. Next generation biobanks are the only places that would have biosamples, biosample derived MSCs, and biosample derived data sets meant for the intended applications. Human bio-discards like umbilical

cord (UC) tissue, milk teeth residing dental pulp (DP), bone marrow, adipose tissue are some few of the clinically established sources to harvest clinical grade MSCs.

Compared with other sources of MSCs, DPMSCs like UCMSCs can be easily isolated in a non-invasive manner from discarded teeth and comply with ethical considerations as well; are abundantly available, are easy to harvest, and have similar effective therapeutic abilities with immune-modulatory functions. Harvesting MSCs and configuring them to a specific application involves technology that is beyond cryopreservation protocols. Dental pulp harvested and configured MSCs have been researched and developed for next gen applications in Implantology, periodontal diseases, regenerative dentistry while the cell based technology involves large scale production, quality assurance with the cell type meant for application.

So, I strongly recommend the families with kids aged between 5 and 11 yr; any individual undergoing orthodontic corrections; anyone with wisdom teeth to store your dental pulp derivatives (DPMSCs and acquired genetic information analyzed) NOW when you have the opportunity as pandemics or epidemics would not give any notice to anybody in the world.

You are very powerful if you have stored your own biomaterial that you can access when you need it and not to be at the mercy of any pharmaceutical companies or governments to avail the treatment. Preparedness and prompt response to emergence are two strong pillars for the

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control of pandemic or epidemic while biobanks with in-built foundation and capacities to handle the applications beyond storing are the ones to be chosen by you.

DP due to its high vascularity and regenerating capacity, establishes evidence to be a source of stem cells while scientific advancements in the regenerative technology, with the inclusion of DP stem cells, tissue scaffolds and cell signaling molecules directs towards preserving them. Biobanking provides the basis for the introduction and integration of latest advancements in dentistry and beyond.

The practising Periodontists and Implantologists can work with next gen biobanks to integrate some of these derived innovative applications to personalize treatments and practice. I would like to conclude by stating that if practitioners and next gen biobanks can work together in the interest of the patient community, the delivery of

transformative medicine is going to be the new norm, according to me.

Author biography



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