

Advancing in science and technology to tackle emerging infectious diseases

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Abstract

Statement of the Problem: Covid-19 is spreading rapidly over the globe, but there are few specific tools available to control the growing pandemic and to treat those who are sick. What is lacking is a specific antiviral agent to treat the infected and subsequently, decrease viral shedding and transmission. The search for better chemotherapeutic agents remains a high priority. Here I consider novel approaches to advance our mission of reducing illness and death from the emergent infectious disease using stem cells and to capture the therapeutic properties of stem cells using nanotechnology. Also hospitals and healthcare systems around the world are facing acute shortages of supplies of protective medical equipment. **Methodology:** Stem cell with Nano-sized particles and devices for various applications, including targeted drug delivery and the production of new therapeutic materials. 3D printing technology should be applied in producing vital equipment to meet the increasing need for medical hardware. **Findings:** New thinking on innovation, access to medicines, and developing capacity in health innovation will allow the stronger translation of basic research, support product development and strengthen and sustain community uptake. The possibility of a ready supply of stem cells to replace diseased tissues is particularly exciting. Nanoparticles can act as antiviral drug delivery systems; and they can be designed to exhibit antiviral effects. Application of 3D printing technology could sustain the increasing need for medical hardware (e.g. facemasks, ventilators and breathing filters). **Conclusion:** To alleviate the effects of infectious diseases we need to engage with all aspects of the innovation system. Stem cells based on nano-technology may have great potential to be of enormous help in the treatment of COVID-19. Enabling innovation and access to health technologies remains a key strategy in combating infectious diseases. Recommendation is to produce the funding required for medical research in the future..

Biography:

Laila M. Montaser, MD is Professor of Clinical Pathology. She is Chair, of Stem Cell, Regenerative Medicine, Nanotechnology and Tissue Engineering (SRNT) Research Group. She serves as the Head, Founder Leader of Clinical Pathology Department, Faculty of Medicine, Menoufia University. She is the nominator of Council of Menoufia University to TWAS prize in Medical Sciences and to award of Nano Science Research Excellence. She gained 4 Awards: - Gold Medal of perfect and Certificate of Excellence for the best pupil in Alexandria Governorate from Egyptian Feast of Science. - Medal of Merit from Egyptian Medical Syndicate in 1986, 1998, and 2002. She supervised more than 47 M. Sc. theses and 13 Doctorate theses. She has made Faculty of Medicine a hub at Menoufia University. She is uniquely trained and situated and has a philosophy on how to manage research specifically with Stem Cell, Regenerative Medicine, Nanomedicine and Tissue Engineering

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