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Current scenario of Regenerative Medicine market in India

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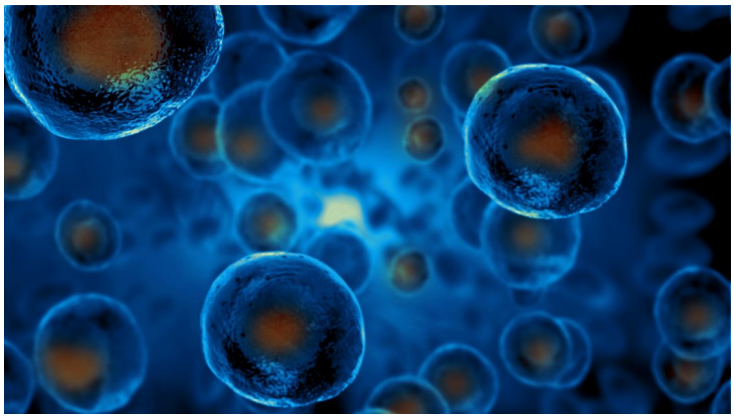

With changing times, our approach towards situations has also changed. As a country, we are rapidly developing and have been projected as the world's fastest growing economy. We are also seeing a change in the type of age-specific, chronic, debilitating diseases. Thus, the manner in which we diagnose and treat such diseases are also seeing a paradigm shift. From empirical use of drugs to target-specific treatments, we are now advancing towards molecular dysfunction-based therapies. The trend is to utilize the endogenous repair mechanisms of the human body. Cells, growth factors and other biological products, when present at the right site; at the right moment, stimulate the natural healing mechanisms of the body and aid in management of health conditions.

Reports have indicated that the global regenerative medicine market was worth $28 billion in 2018 and will grow to over $81 billion by 2023, with a compound annual growth rate (CAGR) of 23.3% during this period. This science is now being recognized worldwide, and India is promoting research and development in the field of Regenerative Medicine and Cell-based therapy. This is in an effort to promote domestic innovation and collaborations with both national and international organizations to achieve excellence in healthcare. We are witnessing rapid advances in cell-based therapy, cord blood banking, as well as gene therapy, tissue engineering, biomaterials, and 3D printing. However, there persist challenges related to regulations and ethics concerning clinical application of such therapies. We need strict a governing framework to capitalize on the growing market of Regenerative Medicine.

Our government has taken several initiatives to promote developments in this field. Pertaining to stem cells, the Department of Biotechnology (DBT) has invested in basic stem cell research since 2001 and currently over 40 institutions, hospitals and industries in our country are actively involved in research. The Institute for Stem Cell Biology and Regenerative Medicine (inStem) was also opened in the year 2009 (an initiative of the DBT), which is an independent research institute in this field. This institute promotes networking, collaborative research, and translational development of therapeutics between researchers, medical professionals, and businesses on a national and international level.

Moreover, as per the National Guidelines for Stem Cell Research (2017), at present, hematopoietic stem cell transplantation (HSCT) is approved and is effective for treatment of hematological disorders such as leukemia, sickle cell anemia etc. There is further provision for cell-based therapy to be conducted in the form of clinical trials after obtaining necessary regulatory approvals for other indications.

Public-private partnership may possibly provide the much required thrust for rapid transition from research to clinical application. This will also aid in wide dissemination of services to the masses at affordable costs.

From the patients' perspective: The urban individual today is well informed about every service that he avails. The internet boom and availability of information (although not always correct) at the click of a button has enabled the common man to gather information about medical procedures as well. Everyone looks for minimally invasive therapeutic modalities and this is where Regenerative Medicine scores. This effective treatment minimizes the risk of infection (possible due to surgery), treatment duration, and recovery period. Individuals therefore have begun to choose this over conventional treatments.

Nonetheless, despite increasing awareness regarding the complete potential of regenerative medicine, gene therapy, cell-based therapy etc., the science is still in nascent stages. The challenges faced are due to lack of thorough knowledge and skepticism regarding outcomes of such newer therapies. Also, our country lacks the infrastructure required to simplify new age technologies and enable researchers and clinicians implement these in routine practice. The need of the hour, therefore, is education at the primary level (medical school) and introduction of fellowship/post-graduate programs as well as improved funding options to improve infrastructure.

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