OMICS Group Conferences
Accelerating Scientific Discovery
3rd World Congress on
Cell Science & Stem Cell Research
November 20- 22, 2013 DoubleTree by Hilton Baltimore-BWI Airport, USA

Probing mesenchymal stem cells from lab to life: Are we poised to signal the dawn of a new frontier?

Ganapathi Bhat .M
Jaslok Hospital Mumbai, India

Abstract

The last decade has witnessed an explosion of literature in the field of mesenchymal stem cells (MSCs) contesting their promise as a source of reparative cells. MSC-based therapies are being evaluated for the treatment of a broad array of ischemic, inflammatory, and immunological disorders in over 252 registered clinical trials rapidly increasing in number and scope.

MSCs are a rare population of cells first isolated from bone marrow and subsequently from various tissues. Their extensive potential to partake in the anatomy and physiology of distant organs has been linked to secretion of paracrine-acting angiogenic, trophic, anti-inflammatory, and immunomodulatory factors. The rationale for their use is based on their ability to: migrate to the site of injury, differentiate into cell lineages, release cell survival/ proliferation factors, and modulate immune response/inflammation.

Different protocols for MSCs preparation and transplantation and their variability may often account for the discordant results in clinical trials. Risk for chromosomal aberrations, neoplastic transformation, increased telomerase activity has been reported for human MSCs in the experimental setting.

Hence it is paramount to have specific quality control and safety criteria mandates, follow standardized GMP conditions for: cell processing, conduct of preclinical animal models, meaningful phase I/II clinical trials, before advent into therapeutics. Although researchers continue to remain skeptical about the actual mechanism of repair, the ease of culture isolation of MSCs, their moderate side effects in on-going trials, and their pleiotropic functions make them promising candidates to usher in the next generation of cell based therapeutics.

Biography

Dr Ganapathi Bhat .M, working as Hon. Consultant Medical Oncologist & Stem cell transplant physician at Jaslok Hospital Mumbai, India and member of ESMO, IELSHG, EHA and an Affiliate of American Association for Cancer Research. Trained in his chosen field of oncology in various institutions in India and abroad. He gained specialized training in stem cell transplantation as part of the ESH-EBMT (2007), 2011(Labaule, France) and ICAS training program (2009) from ULM University, Germany.

He has to his credit numerous academic articles published in Indian, International journals and textbooks. He is involved in various clinical trials as investigator and co-investigator.