

Clinical applications of autologous bone marrow derived cells

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Cardiovascular diseases are a major burden on healthcare in modern society. Diseases, such as Critical Limb Ischemia (CLI), are debilitating. Many of the cardiovascular ischemic disease patients have limited surgical or medical options. Regeneration of vascular system is an attractive treatment strategy and is actively pursued in various preclinical and clinical settings. One of the options in regenerative medicine is the use of autologous bone-marrow concentrate (aBMC) containing stem and progenitor cells. Autologous bone-marrow concentrate (aBMC) is derived from the bone marrow aspirate (BMA) by density centrifugation and can be delivered either intra-muscularly (IM) or intra-coronary in the affected region. The aBMC consists of a) an acellular fraction comprised of autologous plasma and the cytokines and b) cellular fraction which is a source of (i) proangiogenic cells such as hematopoietic stem cells, mesenchymal progenitor cells, and endothelial progenitor cells; (ii) other cells of immune system at different levels of maturity and multi-potency. The acellular and cellular components participate in tissue repair and regeneration and have made aBMC an attractive source of cells and cytokines for therapeutic angiogenesis in the treatment of ischemic diseases.

Biography

Dalip Sethi currently serves as Director of Clinical Research at Cesca Therapeutics Inc., a public company engaged in the research, development, and commercialization of cellular therapies and delivery systems for use in regenerative medicine. He holds a Ph.D in Biotechnology from Institute of Genomics & Integrative Biology, New Delhi, and a Master's in Organic Chemistry from Hansraj College, Delhi University, India, and conducted Post-doctoral studies at Thomas Jefferson University, School of Medicine. He is currently engaged in the development of point-of-care devices, methods and diagnostics for use in autologous cell therapy in the treatment of cardiovascular and orthopedic diseases.

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