

# REGENERATION AND REPAIR IN CARDIOVASCULAR DISEASE, OBSTACLES AND OPPORTUNITIES

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**T**he primary cause of death among chronic diseases worldwide is ischemic cardiovascular diseases, such as stroke and myocardial infarction. Recent evidence indicates that adult mesenchymal stem cells therapy aimed at restoring organ function, and cardiovascular repair represent promising strategies to treat cardiovascular diseases, and have been recognized as one of the potential therapeutic agents, following several tests in animal models and clinical trials. In the process, various sources of mesenchymal stem cells have been identified which helps in cardiac regeneration by either revitalizing the cardiac stem cells or revascularizing the heart. Although mesenchymal cell therapy has achieved considerable admiration, promising therapeutic strategy is the priming of therapeutic MSCs with stem cell modulators before transplantation. Therapeutic efficacy of MSCs in vitro or in vivo from cell priming to tissue engineering strategies, for use some challenges still remain that need to be overcome in order to establish it as a successful technique. Questions are going on: which specific types of stem cells are likely to be most effective? Can heart cells divide, and, if so, can we develop strategies to stimulate the growth and differentiation of the cardiac cells left in the injured heart to promote recovery of tissue mass and function? Nobody knows what will be the best therapy for our patients. We may need different cells for different patients and different cells for drug discovery or tissue engineering. Which cell(s) will ultimately prove to be useful in patients is a matter of opinion.

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