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SOME ASPECTS OF THE STEM CELL USE IN CARDIOLOGY

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Last time, numerous publications on stem cells and cell therapies have appeared. Discussed topics include differentiation of exogenous stem cells into various cell types, replacement of senescent and damaged cells. Certain studies reported that implanted cells improve regeneration of animal hearts after an experimental myocardial infarction. The cell therapies were translated to the clinic. However, effectiveness in human studies has been ambiguous or absent. Apparently, implanted cells were not forming new cardiac tissue. Alternative action mechanisms have been proposed: immunomodulating, paracrine and anti-aging. However, there are no reasons to assume that special functions would be more developed in progenitors than in differentiated cells. In conclusion, therapeutic methods with unproven effects should be tested by high quality research protected from conflicts of interest. Stem cells seem to be a promising field of research. Studies of more differentiated cells and cell-free products mimicking paracrine effects of cell-based therapies are promising as well.

Keywords: stem cells, cell therapy, cell differentiation, cardiology