

Cell therapy is a tempting and possibly promising therapeutic approach, which could be used in the near future to prevent the serious health effects on the heart and thus on the whole human organism resulting from myocardial infarction. The portion of the heart afflicted by infarction disrupts the architecture of the heart chamber as a whole and causes it to undergo the process of remodeling in a less or more pronounced manner. This process leads to progressive deterioration of the heart function, which may eventually lead to heart failure. The potential regeneration of a viable heart tissue by stem cells implantation would have the means of ceasing or reverting this harmful process.

The introduction of stem cells into the heart tissue following a myocardial infarction can be achieved by several different techniques, using various cell types and in various time intervals after the occurrence of myocardial infarction. So far, a number of studies using animal models of myocardial infarction, have shown that the stem cells implantation has a favorable effect on the restoration of heart function, while not showing such occurrence of adverse effects that would exclude further investigation in the form of clinical studies.

The clinical studies described in this work do not allow to make a definite conclusion. Some of the studies are rather in favor of cell therapy, while other did not support its benefit. It is therefore necessary to methodically continue with the investigations in order to definitely confirm or disprove the potential benefit of stem cells implantation in preventing the heart remodeling.