

ABSTRACT

Coronary artery disease is a common precursor to sudden cardiac death worldwide. To regenerate lost myocardium and coronary vasculature, stem cell transplantation is a promising therapeutic approach for the treatment. In this study, we examined the therapeutic effects of stem cells from human exfoliated deciduous teeth (SHED) on myocardial regeneration. Fifteen adult male New Zealand White rabbits were subjected to coronary artery occlusion. The marginal branch of the left circumflex coronary artery of rabbits was ligated over 8 weeks to produce an ischemic area of 25-30% of the left ventricle. After surgically induced myocardial ischemia, rabbits in a test group were injected by SHEDs. Heart rate variability was measured to reflect cardiac autonomic modulation. The infarcted size measurements were performed at the end of each experiment. Our results show significant reduction in infarcted size in the SHED-transplanted group. This finding suggests that SHED could be an alternative selection for cardiac repair.

Keywords: stem cells, myocardial infarction, heart rate variability