

3rd International Conference on Tissue Science & Regenerative Medicine

September 24-26, 2014 Valencia Convention Centre, Spain

Cardiac telocyte therapy for infarcted myocardium

Cai Dongqing

Ji Nan University, China

Regeneration of damaged myocardium is still a big challenge in clinic. Stem cell therapy has shed light to regenerate the ischemic myocardium. However, low survival rate of transplanted stem cells, very low terminal differentiation of transplanted stem cells, and serious fibrosis of infarcted zone limit therapeutic effects of stem cell to achieve functional and structural regeneration of ischemic myocardium. Recent studies have shown that supporting niche cells which are consisted in cardiac unit in myocardium might play an important role in regeneration of myocardium. A novel interstitial cell, named as telocyte, has been identified recently in heart interstitium. Recently we reported that cardiac telocyte (CTs) network in myocardium was impaired during myocardial infarction (MI). In addition, transplantation of CTs in both infarcted and border zone of myocardium simultaneously was able to decrease the infarct size and improve the myocardial function. Our up-to-date study further revealed that the midterm therapeutic effects (decrease of infarct size and improve myocardial function) of CTs transplantation for MI was maintained till 14 weeks. The cellular mechanism of therapeutic effects using CTs for MI was attributed to increasing of angiogenesis, improving CT network reconstruction and decreasing fibrosis in ischemic myocardium. The finding of our study suggested that therapeutic effects using CTs was able to maintained at least for 14 weeks. The CT therapy would be considered as one of the potential novel cell therapies for MI. The CTs have high potential to be applied to regenerate MI used alone or tandem stem cells.

Biography

Cai Dongqing has completed his MD in Guangzhou Medical College; 1987, his PhD was done in The Chinese University of Hong Kong; 2000, Postdoctoral Associate in Weill Medical College of Cornell University [U.S.A.]; 2000-2003. He is a Professor and Director for Key Laboratory for Regenerative Medicine, Ministry of Education, Ji Nan University and also being Professor and Director for Department of Developmental and Regenerative Biology, Ji Nan University. His scientific interests are 1) Aging and microenvironment in regeneration of myocardial infarction (MI); 2) Cardiac vascular specific targeting and therapy (stem cell and therapeutic angiogenesis) for MI; 3) Aging and regeneration of Tissue & Organ. Grant: 2003-present: 863, International collaboration grant of Ministry of Science & Technology, five NSFC-grants, two Key grant of GDZRKXJJ and other five Guangdong and Guangzhou government grants. He has published 40 SCI papers included: JCOMM, Proteomics, Am J Physiol Heart Circ Physiol and Physiological Genomics etc.

tdongbme@jnu.edu.cn