51 The effect of human mesenchymal stem cell on cigarette smoke–induced alterations of cardiac function and lipid metabolism in rat

YM Liang[1], X Li[1], YL Zhang[2], YC Yeung[1], MSM Ip[1], HF Tse[2], QZ Lian[2], JCW Mak[1]
[1] Division of Respiratory Medicine, Department of Medicine, The University of Hong Kong, Hong Kong
[2] Division of Cardiology, Department of Medicine, The University of Hong Kong, Hong Kong

Introduction: Cigarette smoking is recognised as a major risk factor for cardiovascular diseases. Mesenchymal stem cells (MSC) were reported to attenuate cardiac injury of myocardial infarction. The aim of this study was to investigate the effect of bone marrow–derived MSCs (BM-MSC) and induced pluripotent stem cell–derived MSC (IPSC-MSC) in heart on cigarette smoke–exposed rat model.

Methods: Male Sprague-Dawley rats (aged 6-7 weeks) were randomly divided into sham air (SA) group, cigarette smoke (CS) group, IPSC-MSC treatment (IP/CS) group, and BM-MSC treatment (BM/CS) group respectively. All the animals were exposed to 4% CS except SA group to fresh air for 1 hour each day for 56 days in ventilated chambers. Two doses of 3×10^6 of IPSC-MSC or BM-MSC cells were injected intravenously via tail vein in IP/CS or BM/CS group on the day 29 and day 43. Animals were anaesthetised 24 hours after the last smoking exposure for cardiac function examination by echocardiography. Animals were then sacrificed and lipid extraction of heart tissue was prepared for determining cholesterol, triglyceride, and free fatty acid (FFA) levels.

Results: From echocardiograph, IPSC-MSC reversed the CS-induced decrease in cardiac function by elevating left ventricular ejection fraction (LVEF) and fractional shortening (FS). Both IPSC-MSC and BM-MSC treatments were able to attenuate the CS-induced elevation of cholesterol and triglyceride level but could not reverse the reduction of FFA level in heart tissue.

Conclusion: Our findings suggest that IPSC-MSC treatment could alleviate the CS-induced cardiac dysfunction, which is likely due to the amelioration of lipid metabolism in heart.

52 Characteristics and prognosis of gastric cancer patients diagnosed within 5 years of prior negative gastroscopy

KSH Liu, IFN Hung, T Tong, KM Chu, WK Leung
Department of Medicine and Surgery, University of Hong Kong, Queen Mary Hospital, Hong Kong

Introduction: Gastric cancer diagnosed within 3 years of previous negative gastroscopy (OGD) is considered as missed cancers. Little is known about the characteristics and prognosis of these patients. This study aimed to compare the frequency, characteristics, and prognosis of gastric cancer patients with a previous negative OGD performed at different time intervals.

Methods: Consecutive patients with gastric adenocarcinoma diagnosed in our hospital between 2006 and 2010 were identified. All prior endoscopy records were retrieved from a centralised computer database. Patients were divided into three groups according to the intervals of previous "negative" endoscopy: between 6 and 36 months (Group A), between 3 and 5 years (Group B), and between 5 and 10 years (Group C).

Results: A total of 487 patients with gastric cancers were diagnosed in the study period and 48 (9.9%) of them had previous "negative" gastroscopy. There were 12 (2.5%) patients in group A, 15 (3.1%) in group B, and 21 (4.3%) patients in group C. The most common baseline endoscopy findings in these patients were gastric ulcer (31.3%). Patients who developed gastric cancer within 5 years of previous endoscopy had lower prevalence of intestinal metaplasia at baseline (P=0.039). Although stage I/II cancers were more common in Group A (58.3%), the median survival of this group was not superior to Group C (log rank test, P=0.035).

Conclusion: Gastric cancers that were diagnosed within 5 years of prior negative gastroscopy had lower survival rates, which cannot be explained by difference in tumour staging alone. Our findings may suggest a more aggressive behaviour of a subtype of gastric cancer that is not easily recognised by prior endoscopy. These findings may have implications on the optimal screening interval for patients at high risk of gastric cancer development.