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Basic Medical Sciences

Oral

Proteomic Profiles of Young Adults with Acute Myocardial Infarction

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Introduction: The incidence of acute myocardial infarction (AMI) in young adults is increasing. However, a molecular study focusing on the pathophysiological changes in young AMI remains limited. This study aims to examine the proteomic profile of young adults with AMI compared to control subjects. We also hope to identify disease-specific protein biomarkers that contribute to the development of AMI in the young. **Materials and Methods:** Pooled plasma protein from 10 AMI patients aged 18 to 45 years and 10 age, gender and race-matched volunteers were separated using two dimensional electrophoresis (2-DE). The protein spots were analysed using the PD Quest analysis software. The protein spots that were found to have been expressed differently between the two groups were identified by Matrix Assisted Laser Desorption/Ionization Time of Flight (MALDI-TOF) Mass Spectrometry. **Results:** There were three differently expressed protein spots, namely Apolipoprotein AI (Apo AI), Apolipoprotein AIV (Apo AIV) and Haptoglobin. The expressions of these proteins were found to be increased in young patients with AMI compared to control subjects ($p < 0.05$). **Conclusion:** The up-regulation of Apo AI, Apo AIV and Haptoglobin in AMI patients could be in response to the inflammatory process associated with the recent cardiac event. The current study seems to reveal a significant function of these proteins during the acute phase response. Thus, Apo AI, Apo AIV and Haptoglobin are potential new biomarkers for young AMI.