THE ROLE OF miRNAs IN ACUTE MYOCARDIAL INFARCTION OF YOUNG ADULTS

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ABSTRACT

Acute myocardial infarction (AMI) is the leading cause of death worldwide. In Malaysia, people are getting AMI at younger age compared to well-developed countries. The role of microRNA (miRNA) in pathogenesis of AMI is not well elucidated and its involvement in young population has not been studied. miRNAs possibly affect the atherogenesis, a precursor for AMI by affecting the genes that regulate endothelial stability, atherosclerotic plaque destabilization, fibrogenesis and heart remodelling post infarction. Understanding the pathogenesis of AMI in this young population is important in providing accurate diagnosis and prompt management of the disease. The aim of our study is to investigate how miRNAs contribute to the pathogenesis of AMI by profiling specific miRNAs that are dysregulated following an AMI in young group and to determine whether these miRNAs lead to the dysregulation of their target mRNA. Blood sample will be taken from the control, young and mature AMI groups and divided into 2 aliquots for the miRNA profiling analysis and mRNA analysis. The gene expressions will be analysed using the Bio-Rad CFX96 software. The significance of miRNA and mRNA expressions will be assessed using appropriate statistical analysis. The discovery of miRNAs involved in the AMI pathogenesis in this study could lead to potential usage as novel biomarkers for detection of early cardiac injury, prognosis and therapeutic intervention.