Cardiovascular diseases related microRNA finding and potential clinical significance

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Atherosclerosis is a chronic, progressive, inflammatory disease with a long asymptomatic phase. Therefore, early finding of the risks of atherosclerosis, and then changing one's lifestyle, preventing and treating the disease at an early stage are very important. Finding sensitive and non-invasive biomarkers of atherosclerosis in blood is necessary. MicroRNAs (miRNAs) are a group of small, non-coding regulatory RNAs. They could inversely regulate the expression of their target genes at the post-transcriptional level by inhibiting translation or causing the degradation of the target messenger RNA (mRNA). miRNAs play a crucial role in the development of animals, by regulating the formation of tissues and organs. Previous studies have demonstrated that miRNAs are present in clinical samples of plasma and serum in a remarkably stable form, and they are often regulated in a tissue- and pathology-specific manner. The use of circulating miRNAs as clinical biomarkers has generated great interest. Solexa sequencing followed by bioinformatics analysis have been used to predict the novel miRNAs in control individuals (n=15), coronary disease (AS) patients (n=15) and unstable angina pectoris (UAP) patients (n=15). Four miRNAs were discovered and validated in large scale number of clinical blood sample. All of them have been registered in microRNA database (http://mirbase.org). The bioinformatics analysis suggested that most of them might be involved in the disease process, including the regulation of Rho protein signal transduction, cell migration, and the induction of apoptosis.

Biography

Yaping Tian is the Professor of Department of Clinical Biochemistry, Chinese PLA General Hospital and Military Medical School. He is also a Professor at Nankai University, and at the Tsinghua University. He has received his Master’s Degree in Medicine from Chinese PLA Postgraduate Medical School in the year 1989 and PhD from Academy of Military Medical Sciences in 1993. He had been trained as Postdoctoral Fellow for 2 years (1995-1997) in The Queen Elizabeth Hospital, Australia. He has been focusing on the study of the specific serum proteomic profiles and genetic signatures in different diseases, especially on cancer and cardiovascular diseases. He also focused on the studies of antioxidants in herbal medicine and free radical biology and has received more than 20 grants and published more than 300 scientific papers in peer-reviewed journals. He is on the Editorial Boards of several journals and the Honor Chairman of Clinical Biochemistry and Applied Molecular Biology Association, CSBMB.

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