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The potential of small RNAs as biomarker and as therapeutic tools for treating heart diseases

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MicroRNAs (miRNAs) are critical regulators of most major cellular processes. miRNAs appear to play a vital role in the pathogenesis of numerous diseases including atrial fibrillation, the most commonly encountered cardiac rhythm disorder. Among the several miRNAs that appear to be involved in pathogenesis of atrial fibrillation, miRNA 208a is linked to fibrosis and proper cardiac conduction.

We quantified the expression levels of miRNA 208a in left atrial tissue of patients with paroxysmal, persistent, long-standing persistent and permanent arrhythmia using quantitative PCR. In paroxysmal atrial fibrillation, miRNA 208a was expressed moderately, whereas the expression was enhanced in persistent atrial fibrillation and significantly reduced in long-standing persistent atrial fibrillation. The difference between persistent and long-standing persistent atrial fibrillation was significant at $p=0.018$. The patient with permanent atrial fibrillation displayed the lowest miRNA 208a expression. The findings from our study suggest a decline in miRNA 208a expression with ongoing arrhythmia, possibly preceded by a rise in expression from paroxysmal to persistent atrial fibrillation. The significant changes in miRNA 208a expression over the course of the disease may be used as a diagnostic tool to monitor the progression of atrial fibrillation.

Biography

Salah A. Mohamed is Laboratory and Group Leader in Department of Cardio and Thoracic Vascular Surgery, University Clinic of Schleswig-Holstein Campus Luebeck, the group is dedicated to research on aging, biomarker, aortic and aortic valve diseases. He has published more than 20 papers in reputed journals and serving as an editorial board member of repute.

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