Related Work:

The findings of major studies on the relationship between miRNA and AMI were summarised. According to studies, the serum miR1 level in AMI patients increased dramatically relative to non-AMI controls and returned to normal after 2 weeks of drug treatment.The serum level of miR1 in mice with coronary artery ligature increased rapidly after the onset of AMI in a model of myocardial infarction in mice with coronary artery ligature.The serum miR133 level in AMI patients increased by 4.4 times compared to the normal control group and returned to normal after 7 days. The researchers also discovered that serum miR133 was linked to cTnT, but that miR133 peaked before cTnT.The levels of serum miR133a and miR133b were also linked to a rise in troponin levels, and the level of miR133a was also linked to the risk of death in AMI patients.MiR208 was not expressed in normal myocardium, according to a review of miRNA in cardiac myocytes from AMI patients. MiR208 was discovered to have a higher cardiac specificity than miR1, miR133, or miR499. Furthermore, miR208 was highly expressed in the AMI rat model at 1 hour after coronary artery ligation, peaked at 3 hours, and gradually decreased at 612 hours., disappeared after 24 hours.MiR499, like miR208, was not found in healthy human serum but was found to be elevated in the serum of AMI patients. It was not found in congestive heart failure or normal heart.The researchers discovered that the serum miR4995p in NSTEMI patients was 80 times higher than the stable control group after analysing 92 patients with NSTEMI. As a result, miR499 can be used as a biomarker to diagnose AMI.

Finally, the informativeness for AMI diagnosis was investigated using the ROC curves of four upregulated miRNAs and four downregulated miRNAs. Four upregulated miRNAs had AUCs of 0.936, 0.919, 0.936, and 0.965, while two downregulated miRNAs had AUCs of 0.688 and 0.716.The high specificity and sensitivity of the denoted threshold score of circulating miR935p, miR1265p, miR199a5p, and miR499a5p for detection of AMI from non-AMI control group were achieved by using the denoted threshold score of circulating miR935p, miR1265p, miR199a5p, and miR499a5p.As a result, the data showed that circulating miRNAs had a significant role in AMI diagnosis, corroborating previous findings that circulating miRNAs could be used to diagnose AMI as novel biomarkers.The remaining 92 upregulated miRNAs and 81 downregulated miRNAs will be subjected to ROC analysis in order to identify further candidate miRNAs with diagnostic value.