Emerging Novel Biomarkers for Arteriosclerosis Obliterans

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miRNAs by microarray using plasma of control and ASO patients and confirmed using quantitative PCR that some miRNAs were altered in both the plasma and tissues. Among them, miR-4284 and miR-4463 were altered at the early stages of ASO and the alterations were observed even at the later stages. miR-4306 and miR-221-3p gradually decreased with the increasing stages of ASO. Furthermore, miRNA expression patterns in ASO patients with type 2 diabetes mellitus (T2DM) and the effects of homocysteinemia, cystatin C, and smoking on these miRNAs were analyzed. They concluded that plasma miR-4284 and miR-4463 levels could be novel early diagnostic biomarkers for ASO.

However, some questions remain unanswered. One is that the functional roles of these miRNAs for ASO formation are still unknown, although potential target genes of miRNAs were listed using bioinformatics analyses in this study. The actual target genes of miRNAs and the kinds of cells that express and secrete these miRNAs remain unknown. Moreover, the function of miRNAs in cell to cell communication is unclear. These questions are important because the modulation of these miRNAs could be a potential therapeutic approach for ASO. In this study, the expressions of miR-4284 and miR-4463 were altered at the Stage I of ASO (Fontaine classification); therefore, these circulating miRNAs can be novel biomarkers for the early diagnosis of ASO. Large scale studies in the future will support and strengthen the usefulness of these circulating miRNAs for ASO diagnosis.
Disclosures

None.

References

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