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Study of miR-103 as a non-invasive biomarker in the plasma of patients with gastric cancer

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Abstract

Introduction & Aim: Gastric cancer (GC) is the fourth human malignant disease and the second leading cause of cancer death in the world. This cancer is an asymptomatic disease at early stages and so is often detected at advanced stage. Circulating microRNAs play an important role in diagnosis and assessment of patients with cancer and therefore discovery of these molecules is promising to use of them as non-invasive biomarkers in the screening of cancer patients. In the present study, we analyzed the expression of miR-103 in plasma of volunteers with GC and healthy individuals to investigate function of this molecule as a non-invasive diagnostic biomarker.

Methods: In this study Plasma samples were collected from 80 volunteers including 40 patients with GC and 40 healthy individuals. The expression level of the miR-103 molecule was detected by Quantitative Real-time PCR analyses, with SNORD47 as the reference gene.

Results: Result of the present study indicated that expression of miR-103 was increased in plasma of patients with GC. ($p=0.003$)

Conclusion: Based on the results of this study, the miR-103 molecule has a increased expression levels in plasma samples of patients with gastric cancer in comparison to normal individuals and seems can be used as a useful non-invasive biomarker for early diagnosis of GC in the future.

Keywords: Gastric cancer, miRNAs, biomarkers, plasma