

MicroRNAs 182 and 375 Sera Expression as Prognostic Biochemical Markers in Breast Cancer

Marwa Shabayek, Mai Selim, Ola S. Ali, Heba G. Abdelaziz, Dalia O. Makhoul

Abstract

Breast cancer (BC) is the most common malignancy among women; supporting the need for identification of novel prognostic biomarkers, circulating microRNAs (miRNAs) could serve as such in various cancers. The aim of this study was to explore the association between miRNAs 182 and 375 with BC stages and its receptors, based on their expression using real time PCR.

Materials and Methods

Detailed medical history was taken and blood samples were withdrawn from 80 female subjects divided over the studied groups. Patients ranged in age from 24 to 80 years and were classified as follows: group I included 10 noncancerous postmenopausal control subjects; group II included 32 postmenopausal patients with BC; group III included 10 noncancerous premenopausal control subjects; group IV included 24 premenopausal patients with BC; and group V included 6 patients with benign breast tumors.

Results

miRNA 182 expression was significantly higher in group II, group IV, and group V (3.36 \pm 0.14, 2.52 \pm 0.34, and 4.93 \pm 0.39 respectively); miRNA 375 expression was significantly higher in group II, group IV, and group V (4.41 \pm 0.40, 3.12 \pm 0.35, and 11.28 \pm 2.37, respectively) ($P < .05$). Both miRNAs were significantly associated with each other and with receptors used for the prognosis of BC even after multiple regression analysis.

Conclusion

Accordingly, miRNAs 182 and 375 could be potential noninvasive markers used for the follow up of BC patients.

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