STUDY OF SERUM MICRO RNA 210 AS A PREDICTOR 0F CHEMORESISTANCE IN ADVANCED BREAST CANCER IN EGYPTIAN FEMALE PATIENTS

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Introduction

Breast cancer (BC) is the second most common cancer worldwide and ranks the fifth cause of death among all cancers. Taxane-anthracycline combination regimens have been considered as typical neoadjuvant chemotherapeutic strategies for breast cancer. Due to the almost unavoidable development of taxanes-resistance, it is urgently needed to explore accurate biomarkers for the prediction and reverse of the resistance. The discovery of microRNAs brought lightness for these two purposes.

Aim of the work

Estimate serum level of microRNA-210 as a predictor for response to chemotherapy in advanced breast cancer female patients in Egypt and to correlate its level with other clinicopathological criteria of the patient

Methods

Serum samples from 15 patients with advanced breast cancer who are sensitive to taxanes containing regimen, 15 patients with advanced breast cancer who are resistant to taxanes containing regimen, 10 newly diagnosed patients with advanced breast cancer before taking treatment and 10 healthy controls subjected to measurement of microRNA-210 expression level using quantitative real-time reverse transcriptase-polymerase chain reaction (qRT-PCR).
Results of tumor hormone receptor testing (ER estrogen receptor, PR progesterone receptor and HER2 human epidermal growth factorreceptor2) from tumor samples were obtained from patients medical records.

Results

There was a significant increase in the expression level of miR-210 in the sensitive group compared to the resistant one, the resistant cases showed a significant decrease as compared to the control group. Combination between expression level of miRNA 210 and other hormonal receptors(ER,PR or HER2) showed better sensitivity and specificity as markers of response to taxanes containing regimen.

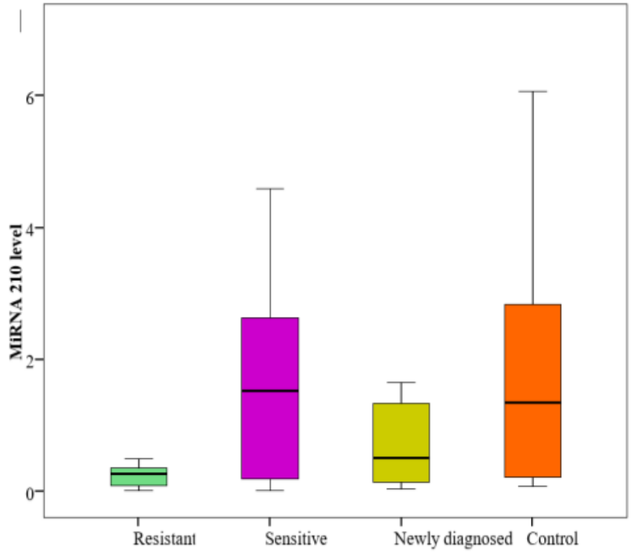

Figure (1) : Comparison between the four studied groups according to miR-210

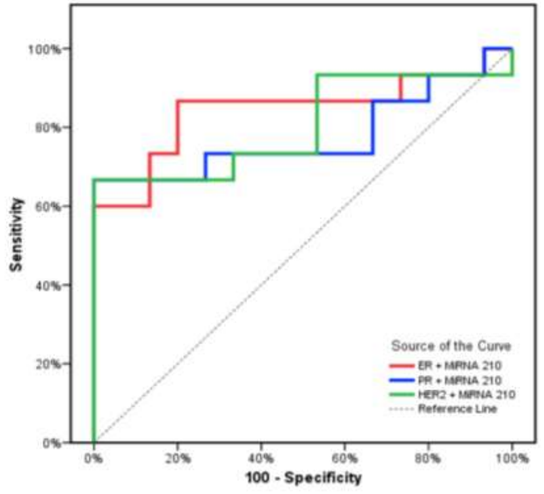

Figure (2) :ROC curve for different combinations of miRNA 210 expression level with ER,PR and HER2 as predictor for taxanes response.)

Conclusion

Serum miRNA-210 expression level is a promising serological marker in combination with ER,PR and HER2 as predictor marker for response to taxanes containing regimen