Prediction of Prognostic Protein Signatures in Young Triple-Negative Breast Cancer Patients

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Abstract:

To date, several Breast Cancer biological subtypes are reported so far which are associated with different treatment responses. At our region, ten years data showed that among 636 BC patients, 30.5% had Triple Negative Breast Cancer (TNBC) who were <40 years of age which is an extremely alarming situation. Since the last decade unfortunately, there has been little success to understand the complexity of TNBC and to discover new biological therapeutic targets, however conventional chemotherapy is the only choice of treatment for TNBC patients. Therefore, there is a dire need to explore and develop therapeutic targets for the treatment of early TNBC. In Case control study, n=54 consecutive female (age range 24-45) TNBC patients were selected with age match control. We have used Mass Spectrometry to analyze plasma samples followed by ELISA and qPCR. Regulatory role was done by STRING pathway bioinformatic analysis. We discovered 300 proteins which were differ within groups, among all Carbonic anhydrase, Profilin-1 Transgelin-2, Platelet basic protein, Insulin-like growth factor-binding protein-3, Neutrophil defensin-1, Fructose-bisphosphate aldolase B and C-X-C motif chemokine- 2 showed high score in TNBC only. Altered level of protein and mRNA level of Profilin-1 and Transgelin-2 only in different stages of TNBC showed its prognostic significance.