Preclinical breast cancer biology

64P METASTATIC BREAST CANCER: GETTING THE FACTS FROM PERIPHERAL BLOOD

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Background: breast cancer is still a major challenge for oncologists worldwide, though giant steps made on orienting treatment, however, understanding tumor biology and cancer cell behavior is still at the beginning especially when we deal with an immortal, pluripotent cell.

Objective: the study is aiming at isolating both circulating breast cancer cells and breast cancer stem cells, expanding them by cell culture and transforming them to paraffin embedded tissue like biopsy with a good yield upon immunohistochemistry.

Patients and methods: the study was performed at al Bairouni university hospital and Kenj Cytogenetic Lab in Damascus (SYRIA). Blood samples were obtained from 100 chemo naive metastatic breast cancer patients. Samples were cultured in (DMEM) media, and after certain passages we obtained breast cancer stem cells CD44+/CD24- confirmed through passage in flowcytometer and PCR of protein product of CD44 surface protein. Then, obtained cells were subjected to immunohistochemistry for ER/PR/Her-2 after they were embedded in paraffin by means of Liquid based cytology.

Results and discussion: we obtained good population of cells through expanding the circulating cancer cells and results of immunophenotyping were the same with the results obtained from the primary tumors (P 0.0001) except in 4 cases where Her-2 was positive on circulating cancer cells while it was negative on the primary.

Conclusion: isolating tumor cells from circulation seems to be an efficient method in evaluating tumor characteristics and behavior. Our method is simple, cheap and informative; however, much work should be done to validate our results.

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