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Editorial

Prognostic and Predictive Factors in Breast Cancer Patients: a Need for Developing the Consensus

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Established clinical approaches in patients with tumors are based on the adherence to the determination of chemotherapy depending on the histopathological account of the tumor as well as its organ of origin. Molecular approaches of neoplasia encompass an ample enumerate of genetic abnormalities as well as the existence of circulating tumor cells (CTCs) in blood, which proceeds to a poor prognosis for the patient. Biomarkers for personalized oncology are applied mainly in molecular diagnostics of chronic myeloid leukemia, colon, breast and lung cancer, and more recently in melanoma. They are certainly applied in the assessment of the advantages that can be achieved through targeted therapy or in the evaluation of toxic effects of the chemotherapeutic used in the therapy.

One might think of dividing the prognostic markers into two subgroups: predictive as well as prognostic markers. It is practical if an identical biomarker might circumscribe a useful prognostic along with a predictive factor; however, this makes this division more adverse and additionally sometimes can be functionally confusing.

Aberrations [1], albeit is a small part of them are detected in all tumor forms, which may be of central importance for oncogenesis and tumor advancement. It is intensely critical to endeavour for novel molecular biomarkers because their balance determination affirms the adjudication of the level of malignancy and disease remission, monitoring of therapy accesses, as well as the envisioning of the response to the applied therapy (which then facilitates therapy determination from the obtainable alternatives). Prognostic biomarkers affirm the monitoring of the approaches of anticancer therapy, the appraisal of the stage of the tumor along with its potential malignancy, as well as the prognosis of disease remission in every case characteristically [2]. A beneficial biomarker is improvised by the specificity for an assigned category of tumor as well as the acceptable level of sensitivity, while the convergence of the biomarker should contemplate the ground of the disease and the acknowledgment to the therapy applied [3]. Prognostic biomarkers are allocated to a specific tumor type by ascertaining the enduring polymorphism, mutation or the conversion in DNA methylation or gene expression, or by determining the existence of characteristic microRNA molecules or CTCs in the peripheral blood.

Most latest alternatives for breast cancer patients are brought about on the basis of prognostic as well as predictive components. In accrual to the conventional TNM staging variables, estrogen and progesterone receptor status as accounted by biochemical ligand-binding analysis are the only alienation factors that have been abundantly endorsed and recommended for routine clinical use. Pathologists today, though, are appraising estrogen and progesterone receptors almost exclusively by immunohistochemical means. While numerous studies advocate that these analyses might have equivalent or even better capabilities to envision patient eventuality, there are effective methodological imperfections to expect before this technology apprehends the clinical and technical validation necessary to justify its routine use. Many laboratories are also analyzing other alienation factors for clinical use by utilizing immunohistochemical methods, composing of, in particular, p53, Ki-67 proliferation indices [4]. The interpretation of Her-2 ER and PR are being conducted according to the American Society of Clinical Oncology guidelines [5]. However, while obtainable assays confer that these components might indeed be beneficial in bringing about treatment determinations, their clinical benefit is still conflicting, and, like the assessment of hormone receptors, there are critical inconsistent technical effects related to tissue preparation, which reagents to apply and, most crucially, how to translate the results. A few laboratories have gone to consequential endeavor to develop reproducible assessments for evaluating these factors, and they have conducted conclusive analyses ascertaining the prognostic and predictive significance of their results. Nonetheless, most laboratories ascribing these analyses have not prosperously approved them and might not even be appreciative of the consequences. Unless laboratories accept their analyses or approach the methods of others who have, they run the risk of analyzing meaningless and conceivably harmful results. In the future, these and other factors will need to be blended into a prognostic index that will better conceive the biologic conversion of breast cancer and that will more precisely envision clinical eventuality.

In 2007 College of American Pathologists assigned the guideline for analyzing the Her-2 [6] which most of the clinical laboratories in North America are pursuing, and there is a consensuson analyzing through immunohistochemistry. Additionally, Her-2 can be ascertained by fluorescence in situ hybridization if the facility is available. Albeit the actual ordeal is in processing the tissues as well as the use of Her-2 antibody since there is no descriptive recommendation.

While the analysis/interpretation guideline can continue to be the same (since this is the best that can be achieved), the final results can alter due to differences in the processing and the antibody used. However, if the guideline is based on the specific available markers,

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such discrepancies in the final data can be minimized or eliminated. I affirm that this will be an arduous task albeit the benefit will be far more. Same exercises can be conducted for other markers like p53 and Ki-67 which stand to the test of the time, but there is no consensus on the reposting approaches and this might be losing the advantage that these markers are advancing. The interpretation guideline for ER and PR has already been formulated by American Society of Clinical Oncology. Novel prognostic makers are advancing at an astonishing pace fostered by statistical significance of the data. I arbitrarily hold little or no doubt of their benefit, but such data can only benefit the patients if reporting consensus can be achieved on some of the specifically selected markers.

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