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A New Frontier in Breast Cancer Management: Oncotype DX

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Diagnosing and prognosticating breast cancer has traditionally relied upon histomorphologic analysis and immunohistochemistry. With the recent advent of multi-gene molecular assays, traditional methods are being augmented with molecular biomarkers. Implementation of the Oncotype DX assay has led to a change in treatment of patients with early stage, estrogen positive cancer. Oncotype DX uses the expression of 21 genes at the mRNA level to determine a 10 year recurrence risk in node negative and 5 year recurrence risk in node positive cancer. 16 malignancy markers related to estrogen, HER2, cell proliferation, and invasion potential are compared with 5 reference genes and run through a proprietary algorithm to provide a recurrence score of either low, intermediate, or high risk. Using the results of this assay provides an opportunity for personalized treatment based on unique malignancy markers. Oncotype DX allows patients with low recurrence risk to be spared the adverse effects of chemotherapy, while ensuring that high risk patients are treated systemically. For the first time, the most recent treatment guidelines specify the use of Oncotype DX for the management of breast cancer.