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Comparison of MammaPrint and TargetPrint results with clinical parameters in German patients with early stage breast cancer.

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Abstract

The 70-gene expression profile MammaPrint is a powerful prognostic indicator for disease outcome in breast cancer patients with improved prediction of recurrence risk compared to currently used guidelines. The microarray-based test TargetPrint further provides reliable, quantitative assessment of mRNA expression levels of estrogen receptor (ER), progesterone receptor (PR) and human epidermal growth factor receptor 2 (HER2). This study was performed as a validation of MammaPrint and TargetPrint in an unselected German breast cancer population and was designed to determine the degree of concordance with currently applied clinical parameters. One hundred and forty cases of breast cancer stage I and II were classified as being low or high risk for distant metastasis using MammaPrint. Results were compared to current clinical risk classifications and adjuvant treatment management. Immunohistochemistry (IHC) and fluorescent in situ hybridization (FISH)/chromogenic in situ hybridization (CISH) assessments of ER, PR and HER2 were further compared with gene expression read-outs using TargetPrint. Thirty-two percent of patients (19/59) with a poor prognosis-signature identified via MammaPrint did not receive adjuvant systemic treatment apart from endocrine therapy and were potentially undertreated; whereas 42% (35/77) of patients with a good prognosis-signature received chemotherapy and were potentially overtreated. Comparison of microarray receptor results with IHC and FISH/CISH were concordant in 97% for ER; 86% for PR; and 94% for HER2. In this German study population, MammaPrint would have resulted in altered treatment advice for adjuvant systemic therapy in 40% of patients. Furthermore, TargetPrint presented high concordance for ER, PR and Her2 with IHC and FISH/CISH analysis.

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