

# **Impact of the Recurrence Score on adjuvant decision-making in ER-positive early breast cancer - Results of a large prospective multicentre decision impact study in node negative and node positive disease**

Rezai M, Eiermann W, Kümmel S, Kühne T, Warm M, Friedrichs K, Schneeweiss A, Markmann S, Eggemann H, Hilfrich J, Jackisch C, Witzel I, Eidtmann H, Kaufmann M, Blohmer J

Background: Oncotype DX® has become part of clinical routine in the diagnosis and decision-making progress in early breast cancer (EBC). Prospective data on its clinical use and impact on treatment decisions in ER-positive (ER+) node negative (N0) disease from various controlled clinical trials in different countries have been published recently. The Recurrence Score® (RS) has also been validated as a prognostic and predictive marker for patients with ER+ node positive (N+) disease. As of today no prospective data have been reported on its impact on decision making in these patients. We performed a large prospective study to evaluate RS-guided adjuvant therapy in N0 and N+ ER+ EBC.

Material and Methods: Patients (pts) with ER+, HER2-negative N0 and N+ (1-3 positive lymph nodes) EBC and no contraindication for adjuvant chemotherapy were included in the study. Physicians' adjuvant treatment recommendations and their confidence in these as well as patients' decisional conflicts were assessed before and after knowledge of the results of the test using standardized questionnaires. Actual treatment data were collected to perform pharmaco-economic analyses. Analyses were performed on the per-protocol population for whom a Recurrence Score result and treatment recommendations pre and post-test were available.

Results: Overall 379 pts were recruited. In 11 pts Oncotype DX could not be performed and 2 pts dropped out leaving 366 pts in the per protocol population. Of these, 244 (66.7%) were N0 and 122 (33.3%) N+. Median age was 56 years (Range 25-85). Overall, 54.1% had low, 38.0% intermediate and 7.9% high RS values. For N0 disease, the distribution of RSs was 53.7%, 38.9%, 7.4% and for N+ disease 54.9%, 36.9% and 9.0%, respectively.

Initial treatment recommendation changed in 33.1% of all cases; 30.3% in N0 and 38.5% in N+ disease, and in 36.4% for pts with low, 30.9% with intermediate and 20.7% with high RSs. In 21.6% of all pts a recommendation for adjuvant chemoendocrine therapy (CHT) was changed to endocrine therapy (HT), 10.7% of recommendations changed from HT to CHT. For N0 disease change rates were 18.4% from CHT to HT and 11.5% from HT to CHT. For N+ disease 27.9% of recommendations changed from CHT to HT and 9.0% of recommendations changed from HT to CHT. In 25% of all, 22% of N0 and 39% of N+ pts initially recommended HT the post-RS recommendation changed to CHT; in 38% of all, 39% of N0 and 37% of N+ pts initially recommended CHT the recommendation changed to HT.

Overall, physicians' confidence increased in 45.1% of all ( $p=0.047$ ) and 44.7% of N0 and 45.9% of N+ cases, respectively. There was a moderate decrease of the decisional conflict score in all pts and subgroups that reached statistical significance for all pts ( $p=0.029$ ) and the low RS subgroup ( $p=0.003$ ).

Conclusions: Results of this large prospective study show an impact of the RS on adjuvant treatment decision making in German clinical practice for patients with ER+ EBC. Recommendations were predominantly changed from chemoendocrine to endocrine

adjuvant therapy resulting in a net reduction of chemotherapy usage. This effect was more pronounced for patients with 1-3 positive nodes.