

30th Annual San Antonio Breast Cancer Symposium -- Abstract #1043

Recurrence score by oncotype DX evaluated on the primary breast tumor predicts the 2-year survival after first relapse.

Bianchini G, Zambetti M, Mariani P, Moliterni A, Bianchi G, Mariani G, Fasolo A, Carcangiu ML, Valagussa P, Gianni L. Fondazione IRCCS Istituto Nazionale dei Tumori, Milan, Italy

Background: Gene expression profiles of the primary breast tumors are most often similar to those in distant metastases eventually developing in the same patient (pt). The aim of the present study was to determine whether the Recurrence Score (RS) assay based on 21-gene expression also predicted prognosis after metastatic relapse.

Patients and Methods: Thirty-nine pts at first relapse after receiving the same neoadjuvant chemotherapy for locally advanced breast cancer in a single institution were evaluated (Gianni et al, JCO 2005). All pts with positive estrogen receptor (ER) received adjuvant tamoxifen. Therapy at distant relapse was not mandated, but was reasonably homogeneous. Oncotype DX on paraffin-embedded core biopsies was performed at diagnosis of breast cancer and it was not repeated at relapse. Two risk groups were defined using the Recurrence Score cut-off value of 25 used in the TAILORx study.

Results: All pts but one were followed for a minimum of 2 years. Of the 39 pts, 11 had a RS \leq 25 (28%) and 28 a RS $>$ 25 (72%). The overall 2-year survival for the 39 pts was 48% and was significantly different in pts with RS \leq 25 vs RS $>$ 25 (90% vs 32%; log-rank test P $<$ 0.01). Univariate analysis showed that RS $>$ 25 (HR 11.2; 1.5-84 95% CI; P $<$ 0.05), short relapse-free interval (RFI) from surgery (HR 2.79; 1.23-6.31 95% CI; P $<$ 0.05, less than 12 vs more than 24 months), and negative ER status (HR 2.6; 1.06-6.41 95% CI; P $<$ 0.05) had a significant association with poorer overall survival. Number of metastatic sites (3 or more) only had a marginal association (HR 2.76; 0.99-7.66 95% CI; P=0.05) and visceral involvement was not significant. Multivariate analysis of the same variables showed that short RFI (HR 2.85; 1.09-7.47 95% CI; P $<$.05) and RS $>$ 25 (HR 7.18; 0.9-57.7 95% CI; P=0.06) were the only variables influencing survival after relapse. The comparison of the multivariate models with and without the RS by likelihood-ratio test was significant (p $<$ 0.05).

Conclusion: The RS assessed on the primary breast cancer by Oncotype DX is also associated with different trends of survival in the first 2 years after recurrence.