AB044. SOH23ABS_117. Value of the 21-gene expression assay in predicting locoregional recurrence rates in estrogen receptor positive breast cancer: a systematic review and network meta-analysis

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Background: The OncotypeDX© 21-gene Recurrence Score (RS) estimates the risk of distant-disease recurrence in early-stage estrogen receptor positive, human epidermal growth factor receptor-2 negative (ER+/HER2–) breast cancer. Using RS to estimate risk of locoregional recurrence (LRR) is less conclusive. We aimed to perform network meta-analysis (NMA) evaluating the RS in estimating LRR in ER+/HER2– breast cancer.

Methods: A NMA was performed according to PRISMA-NMA guidelines. Analysis was performed using R packages and Shiny.

Results: A total of 16 studies with 21,037 patients were included (mean age: 55.1 years; range, 22–96). The mean RS was 17.1 and mean follow up was 66.4 months. Using traditional RS cutoffs, 49.7% of patients had RS <18 (3,944/7,935), 33.8% had RS 18–30 (2,680/7,935), and 16.5% had RS >30 (1,311/7,935). Patients with RS 18–30 [risk ratio (RR): 1.76, 95% confidence interval (CI): 1.32–2.37] and RS >30 (RR: 3.45, 95% CI: 2.63–4.53) were significantly more likely to experience LRR than those with RS <18. Using TAILORx cutoffs, 16.2% of patients had RS <11 (1,974/12,208), 65.8% had RS 11–25 (8,036/12,208), and 18.0% with RS >30 (2,198/12,208). LRR rates were similar for patients with RS 11–25 (RR: 1.120, 95% CI: 0.520–2.410), however those with RS >25 had an increased risk of LRR (RR: 2.490, 95% CI: 0.680–9.390) compared to those with RS <11. There was a stepwise increase in LRR rates when applying traditional and TAILORx cut-offs (both P<0.050).

Conclusions: RS testing accurately estimates LRR risk for patients being treated for early-stage ER+/HER2– breast cancer. Future prospective, randomized studies may validate the predictive value of RS in estimating LRR.

Keywords: Breast cancer; locoregional recurrence (LRR); cancer genomics; personalized medicine; surgical oncology

Acknowledgments

Footnote