



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

Matthew Davey, Eoin Cleere, John O'Donnell, Sara Gasior, Aoife Lowery, Michael Kerin

Department of Surgery, The Lambe Institute for Translational Research, University of Galway, Galway, Ireland

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

Funding: None.

Footnote

Conflicts of Interest: The authors have no conflicts of interest to declare.

Ethical Statement: The authors are accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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doi: 10.21037/map-23-ab044

Cite this abstract as: Davey M, Cleere E, O'Donnell J, Gasior S, Lowery A, Kerin M. 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. *Mesentery Peritoneum* 2023;7:AB044.