

## AB012. SOH21AS238. The natural history and oncological outcomes of HER2 positive breast cancer in the West of Ireland

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**Background:** Human epidermal growth factors receptor-2 (HER2) positive breast cancer accounts for 10–25% of new diagnoses. The aim of the current study was to outline clinicopathological and immunohistochemical characteristics and determine oncological outcomes in HER2+ breast cancer.

**Methods:** Consecutive female patients with HER+ BC managed in a single institution between 2005–2015 were included. Clinicopathological features of HER2 BC were determined. Predictors of complete pathological response (pCR) were assessed using binary logistic regression. Disease-free survival (DFS) and overall survival (OS) were determined using Kaplan-Meier (log-rank) analyses.

**Results:** Five hundred and seven consecutive patients were included with mean age 56.9±13.7 years (23.0–95.0 years). Median follow up was 111.5 months. Seventy-four percent of patients had T1–2 disease (375/507), 46.5% had nodal involvement (236/507), 93.9% had grade 2–3 disease (476/507) and 83.2% had ductal histological subtype (422/507). One hundred and twenty-six patients underwent neoadjuvant therapies, 44.4% of whom achieved pCR (56/126). T1–2 cancers [odds ratio (OR): 8.793, 95% confidence interval (95% CI): 1.088–71.076, P=0.041], estrogen receptor negativity (ER-) (OR: 2.556, 95% CI: 1.239–5.269, P=0.011) and progesterone receptor negativity (PgR-) (OR: 2.450, 95% CI: 1.184–5.068, P=0.016) all

predicted pCR. DFS was 74.2% (376/507) and OS was 76.5% (388/507) at median follow up. Age greater than 65 (both P<0.001), increased tumour stage (both P<0.001), increased nodal stage (both P<0.001), ER- (both P<0.001), PgR- (DFS: P=0.005 & OS: P<0.001) and pCR (DFS: P=0.033 & OS: P=0.032) all predicted DFS and OS.

**Conclusions:** In patients with HER2+ breast cancer, pCR rates can be predicted from routine clinicopathological and immunohistochemical data. Furthermore, survival outcomes may be predicted based on age, disease burden and immunohistochemical tumour properties.

**Keywords:** Breast cancer; personalised medicine; precision medicine; molecular medicine

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### Footnote

*Conflicts of Interest:* AL serves as an unpaid editorial board member of *Mesentery and Peritoneum*. The other 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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