

# AB049. SOH23ABS\_186. Risk of locoregional recurrence after breast cancer surgery by molecular subtype—a systematic review and network meta-analysis

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**Background:** For every four locoregional recurrence (LRR) events prevented, one breast cancer-related death can be prevented. Breast cancer is now substratified into distinct intrinsic biological subtypes. Aims: To perform a systematic review and network meta-analysis (NMA) to determine LRR by breast cancer molecular subtype.

**Methods:** A NMA was performed as per PRISMA-NMA extension guidelines. A multi-treatment comparison was performed, examining the risk of LRR based on breast cancer molecular subtype. Molecular subtypes were classified in accordance with St Gallen expert consensus statement (2013). Analysis was performed using R and Shiny.

**Results:** Five studies including 6,830 patients were included, with results of molecular subtype on 6,731 patients. Overall, 47.3% were Luminal A [LABC: estrogen receptor (ER)+/human epidermal growth factor receptor-2 (HER2)-/progesterone receptor (PR)+ or Ki-67 <20%] (3,182/6,731), 25.5% were Luminal B (LBBC: ER+/HER2-/PR- or Ki-67 ≥20%) (1,719/6,731), 11.2% were Luminal B-HER2+ (LBBC-HER2: ER+/HER2+) (753/6,731), 6.9% were HER2+ (HER2 ER-/HER2+) (466/6,731), and finally, 9.1% were triple negative breast cancer (TNBC: ER-/HER2-) (611/6,731). The mean follow up was 73.9 months. The overall risk of LRR was 4.0% (271/6,731). For molecular

subtypes, the LRR was 1.7% for LABC (55/3,182), 5.1% for LBBC (88/1,719), 6.0% for LBBC-HER2 (45/753), 6.0% for HER2 (28/466) and 7.9% for TNBC (48/611). At NMA, patients with TNBC [odds ratio (OR): 3.73, 95% confidence interval (CI): 1.80–7.74], HER2 (OR: 3.24, 95% CI: 1.50–6.99), LBBC-HER2 (OR: 2.38, 95% CI: 1.09–5.20) and LBBC (OR: 2.20, 95% CI: 1.07–4.50) were significantly more likely to develop LRR relative to LABC.

**Conclusions:** TNBC and HER2 subtypes provide the highest risk of LRR relative to LABC. Multidisciplinary team discussions should consider these results to optimise locoregional control following breast cancer surgery.

**Keywords:** Breast cancer; locoregional neoplasm recurrence; molecular subtype; oncology; breast cancer subtype

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## 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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