

AB002. SOH21AS038. Optimal timing of surgery following breast cancer neoadjuvant chemotherapy: a systematic review and meta-analysis

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Background: The indications for neoadjuvant breast cancer treatment have expanded rapidly in recent decades. Administration of chemotherapy before surgery has the potential to reduce the risk of distant recurrence by targeting circulating micrometastases as well as allowing a more minimalistic approach to surgical intervention. This study aimed to determine the optimum timing of surgery post breast cancer neoadjuvant chemotherapy (NACT).

Methods: A systematic search was performed for studies reporting oncological outcomes in relation to timing of surgery post completion of breast cancer NACT. The primary outcome was to determine whether the timing of surgery post NACT impacted breast cancer overall survival and disease-free survival. We compared patient outcomes between those who had surgery within 8 weeks of completion of NACT to those that had surgery after 8 weeks. Similarly, to determine whether a shorter duration to surgery improved patient outcomes or impacted on morbidity a comparison of less than 4 to 4–8 weeks cohorts was performed. Secondary outcomes included complete pathological response (pCR) post NACT. A meta-analysis was performed using the Mantel-Haenszel method.

Results: Five studies, including 8,794 patients were eligible for inclusion. The cohort of patients that had surgery within 8 weeks of completion of NACT had a statistically significant improved overall survival when compared to the cohort of patients that had surgery after 8 weeks (OR 0.47, 95% CI: 0.34–0.65). Similarly, patients who had surgery

within 8 weeks had a statistically significant improved disease-free survival (OR 0.71, 95% CI: 0.52–0.98, $P=0.04$). There were no survival advantages associated with having surgery less than 4 weeks post completion of NACT (OR 0.78, 95% CI: 0.46–1.33, $P=0.37$). There was no difference in the pCR rate between the two cohorts. (OR 1.01, 95% CI: 0.80–1.28, $P=0.93$). Included studies did not specifically address associated morbidity.

Conclusions: This meta-analysis demonstrates that surgery performed between 4 and 8 weeks post completion of breast cancer NACT is the optimal timing. It has been shown to be associated with an increased overall and disease-free survival while minimizing associated surgical morbidity.

Keywords: Neoadjuvant chemotherapy (NACT); timing; overall survival; disease-free survival; prognosis

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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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