Locally advanced breast cancer treated with neoadjuvant chemotherapy: Is breast-conserving surgery feasible?

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A best evidence topic has been constructed using a described protocol. The three-part question addressed was: is breast-conserving surgery feasible after neoadjuvant chemotherapy for locally advanced breast cancer?

Using the reported search, 19 articles were found, out of these 6 studies were deemed to be suitable to answer the question. The outcomes assessed were local recurrence rate. The best evidence showed that breast conserving surgery is safe in terms of local recurrence.

1. Introduction

This BET was designed using a framework outlined by the International Journal of Surgery [1]. This format was used because a preliminary literature search suggested that the available evidence is of insufficient quality to perform a meaningful meta-analysis. A BET provides evidence-based answers to common clinical questions, using a systematic approach of reviewing the literature.

2. Clinical scenario

A breast surgical resident is about to consent a 55-year-old female with locally advanced breast cancer (LABC) treated with neoadjuvant chemotherapy (NCT) for breast-conserving surgery (BCS). The patient is genuinely concerned about the risk of local recurrence, and she is wondering if the procedure is associated with low recurrence rate?

3. Three-part question

Does [breast-conserving surgery following neoadjuvant chemotherapy] affects [the recurrence rate] in patients with [LABC]?

4. Search strategy

A. Embase 2002 to October 2020 using the OVID interface:
[Locally advanced breast cancer] AND [neoadjuvant chemotherapy] AND [breast-conserving surgery OR mastectomy] AND [recurrence].

B. Medline using the PubMed interface:
[Locally advanced breast cancer] AND [neoadjuvant chemotherapy] AND [breast-conserving surgery OR mastectomy] AND [recurrence].

The results were limited to English articles and human studies.

5. Search outcome

We identified 231 potentially relevant articles. After exclusion of duplicate references, nonrelevant literature, 19 candidate articles were considered. After careful review of the full text of these articles, 6 studies were identified to provide the best evidence to answer the question.

6. Result: see the table

7. Discussion

It is well known that neoadjuvant chemotherapy can effectively downsize the locally advanced breast tumors [8]. For patients with large tumors justifying mastectomy at the initial diagnosis, the use of NCT has been shown to downstage the primary tumor and make breast-conserving surgery feasible.
The two main goals of the surgeon when performing BCS are to obtain tumor-free margins and achieve a good cosmetic outcome by keeping the amount of healthy breast tissue excision as low as possible. Tumor-involved margins increase the risk of LRR and therefore require additional local therapy, such as a radiation therapy boost, re-excision, or even mastectomy. In 2006, Rouzier et al. [5] developed a nomogram for breast cancer patients with locally advanced breast cancer. According to the above articles, the best evidence showed that BCT is feasible and oncologically safe after tumor downstaging by NCT in patients with locally advanced breast cancer.

## Limitation of the review

1. We are aware that the rather small sample size and the retrospective study design are limitations of our study. Despite these limitations, we believe our results to be clinically meaningful.
2. Single centre studies in most of the papers.
3. Shorter period of follow up in some articles.

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## Author contribution

AA: conducted the literature search and wrote the paper.
RI: assisted in the literature search and writing of paper.
HN: assisted in writing of paper.
AK: assisted in writing of paper.
SA: assisted in the literature search, editing of writing.
Research registration number

1. Name of the registry:
2. Unique Identifying number or registration ID:
3. Hyperlink to your specific registration (must be publicly accessible and will be checked):

Guarantor

Awad Alawad.

Provenance and peer review

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Declaration of competing interest

None.

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