Escalation and de-escalation of surgery in early breast cancer after St. Gallen 2017

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ICHOM Standard Set for Breast Cancer

Treatment approach covered:
(Reconstructive) Surgery | Radiotherapy | Chemotherapy | Hormonal Therapy | Targeted Therapy

For a complete overview of the ICHOM Standard Set, including definitions for each measure, time points for collection, and associated risk factors, visit ichom.org/medical/conditions/Breast-Cancer

- Survival
- RFS
- Reoperation
- Acute complications
- Depression
- Pain
- Fatigue
- Body image
- Arm/breast symptoms
- Lympedema
- Vasomotor Symptoms
- Neuropathy
- Arthralgias
- Sexual Dysfunction
- Health related QOL
“Bigger surgery is not the answer to bad biology”

Monica Morrow
Multimodality treatment of breast cancer

• Surgery alone cures the majority of patients with early breast cancer
• The improvement in breast cancer survival in recent decades is the result of adjuvant treatments:
  – Radiation therapy
  – Chemotherapy
  – Anti hormonal therapy
  – Biologicals
• We need to use these treatments sensibly to de-escalate surgical treatment and decrease surgical morbidity
Escalation and de-escalation in surgery for breast cancer

- Mastectomy vs. BCS
- Axillary lymph node evaluation and treatment
- Margins
Radical Mastectomy
MRM
BCS
Skin Sparing
mastectomy
Nipple sparing
mastectomy
Improvements in
reconstructive
options
Oncoplastic
reconstruction
Skin Sparing
mastectomy
Nipple sparing
mastectomy

Figure 1. Temporal Trends in Surgical Treatment of Early Breast Cancer
The panel recommends advocating breast conservation for all eligible patients

– Consider neoadjuvant systemic therapy and/or oncoplastic surgery to facilitate breast conservation
10 year survival after breast-conserving surgery plus radiotherapy compared with mastectomy in early breast cancer in the Netherlands: a population-based study

Marissa C van Maaren, Linda de Munck, Geertuvida H de Bock, Jan J Jobsen, Thijs van Dalen, Sabine C Linn, Philip Poortmans*, Luc J A Strobbe*, Sabine Siesling  
Lancet Oncol 2016; 17: 1158-70

![Graph showing cumulative overall survival (%) over time for mastectomy and breast-conserving surgery plus radiotherapy.](image_url)
Avoiding ALND for SLN positive

• Only established for patients undergoing BCS with adjuvant XRT

**ACOSOG Z0011:**

Women who undergo mastectomy for early breast cancer may receive an ALND, which could have been avoided had they had a lumpectomy.
Breast conserving therapy is better than mastectomy

• So why is the proportion of women opting for mastectomy increasing??
  – Improved reconstructive options?
  – Celebrity effect?
  – Misconceptions ?

• Could we, physicians, have contributed to this trend?
Escalation and de-escalation in surgery for breast cancer

- Mastectomy vs. BCS
- Margins
- Axillary lymph node evaluation and treatment
Margins: Invasive cancer

- 2cm
- 1cm
- 0.5cm
- 2mm
- “No ink on tumor”
The Association of Surgical Margins and Local Recurrence in Women with Ductal Carcinoma In Situ Treated with Breast-Conserving Therapy: A Meta-Analysis

TABLE 4 Estimated treatment (margin threshold) effects on LR from the Bayesian network meta-analysis

<table>
<thead>
<tr>
<th>Threshold distance for negative margins relative to positive: (no. of patients and mean OR (95% CrI) adjusted for follow-up)</th>
<th>&gt;0 or 1 mm</th>
<th>2 mm</th>
<th>3 mm</th>
<th>10 mm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Main model</td>
<td>2230</td>
<td>2412</td>
<td>289</td>
<td>1963</td>
</tr>
<tr>
<td></td>
<td>0.45 (0.32–0.61)</td>
<td>0.32 (0.21–0.48)</td>
<td>0.30 (0.12–0.76)</td>
<td>0.32 (0.19–0.49)</td>
</tr>
</tbody>
</table>
Escalation and de-escalation in surgery for breast cancer

- Mastectomy vs. BCS
- Margins
- Axillary lymph node evaluation and treatment
Surgery of the axilla

- Level I-II axillary lymph node dissection
- Sentinel lymph node biopsy
- Targeted ALND
- Axillary lymph node sampling

XRT to axilla +/- lymphatic drainage
Clinically node negative

• Similar LRR, OS after SLNBx alone (for patients undergoing **BCS with XRT**) – Involved or not

• Z011, AMAROS
Primary surgical treatment of the axilla in early breast cancer:

- Sentinel node positive
  - Meets ALL of the following criteria:
    - T1 or T2 tumor
    - 1 or 2 positive sentinel lymph nodes
    - Breast-conserving therapy
    - Whole-breast RT planned
    - No preoperative chemotherapy
  - Yes to all → No further axillary surgery
  - No → Axillary dissection level I/II
Surgical treatment of the axilla *after* NAST

Still Clinically LN +
- Axillary lymph node dissection

Clinically LN 0
- Axillary lymph node dissection
- Sentinel lymph node biopsy
  - If positive – complete ALND
  - If negative – avoid ALND

XRT to axilla +/- lymphatic drainage
Surgical treatment of the axilla after NAST:

- Core biopsy of breast with placement of imagedetectable marker(s), if not previously performed, must be done to demarcate the tumor bed for surgical management after preoperative systemic therapy.

If ipsilateral axillary lymph node biopsy is positive, axilla may be restaged after preoperative systemic therapy:

- Axillary lymph node dissection (ALND) should be performed if axilla is clinically positive.
- SLNB or ALND can be performed if axilla is clinically negative (category 2B)
pCR in lymph node depends on receptor status:

- 21% for ER+/Her2-  
- 97% for ER-/Her2+
61 y.o., cT2N0: ER pos PgR pos Her2 neg Ki67 20%
SLN positive

Lumpectomy
  SLNBX
    XRT
    Whole breast

Mastectomy
  ALND
    XRT*
    Breast +/- Lymphatic drainage

Neoadjuvant therapy
  ALND
    * If not pCR in LN
    XRT*
    Breast +/- lymphatic drainage
• Should the type of surgery on the primary tumor be determined by tumor biology?
  – Yes – 6.5%
  – No – 93%
Surgery after NAST

- Should the entire area if the original primary tumor be resected after downstaging?
  - Yes – 14%
  - No – 82%
• Minimum margins needed from DCIS when BCS & WBRT planned in order to avoid re-excision:
  - 2 mm – 65%
  - No ink on DCIS – 35%
Question for the audience:

Surgery after NAST

• Is nipple-sparing mastectomy safe after NAST?
  1. Yes
  2. No
Surgery after NAST

• Is nipple-sparing mastectomy safe after NAST?
  – Yes – 86%
  – No – 14%
Question for the audience:
Surgery of the Axilla

- In patients with macro-metastases in 1-2 SLN, ALNDx can be omitted if after mastectomy and no XRT planned
  1. Yes
  2. No
Surgery of the Axilla

• In patients with macro-metastases in 1-2 SLN, ALNDx can be omitted if after mastectomy and no XRT planned

No – 86%
Question for the audience:

Surgery of the Axilla

- In patients with macro-metastases in 1-2 SLN, ALNDx can be omitted if after mastectomy and XRT is planned
  1. Yes
  2. No
Surgery of the Axilla

• In patients with macro-metastases in 1-2 SLN, ALNDx can be omitted if XRT with high-tangents planned after BCS

Yes -78%
• In patients with macro-metastases in 1-2 SLN, ALNDx can be omitted irrespective of biology

Yes – 77%
Question for the audience:

Surgery of the Axilla after NAST

• If clinically LN-positive at Dx and downstages after treatment (cN0 at time of surgery), is SLNBx OK only if LN clipped at Dx with targeted removal at surgery?
  1. Yes
  2. No
Surgery of the Axilla after NAST

• If clinically LN-positive at Dx and downstages after treatment (cN0 at time of surgery), is SLNBx OK only if LN clipped at Dx with targeted removal at surgery?
  
  Yes – 43%
  No – 54%
• In patients with macro-metastases in 1-2 SLN, ALNDx can be omitted irrespective of biology
Yes – 77%
Question for the audience:

Surgery of the Axilla after NAST

- If clinically LN-neg at Dx, is SLNBx appropriate?
  1. Yes
  2. No
Surgery of the Axilla after NAST

- If clinically LN-neg at Dx, is SLNBx appropriate?
  Yes – 96%
Question for the audience:

Surgery of the Axilla after NAST

• If clinically LN-neg at Dx, when is best time to perform SLNBx?
  1. Before NAST
  2. After NAST
  3. Either Valid
Surgery of the Axilla after NAST

• If clinically LN-neg at Dx, when is best time to perform SLNBx?
  Before NAST – 20%
  After NAST – 60%
  Either Valid – 17%
Surgery of the Axilla after NAST

• If clinically LN-positive at Dx and downstages after treatment (cN0 at time of surgery), is SLNBx OK only if LN clipped at Dx with targeted removal at surgery?
  Yes – 50%
  No – 29%
St. Gallen/Vienna 2017: A Brief Summary of the Consensus Discussion about Escalation and De-Escalation of Primary Breast Cancer Treatment

Michael Gnant\textsuperscript{a}  Nadia Harbeck\textsuperscript{b}  Christoph Thomssen\textsuperscript{c}

The margin issue was undisputedly clarified as ‘no ink on tumor’ for primary invasive cancer. Majority voted for 2mm margin in DCIS (62%) but 35% found ‘no ink on DCIS’ sufficient. Margins should not depend on tumor biology.

BCS was confirmed as the intended standard of care. Almost unequivocally in cases of multifocal (97%) or multicentric (61%) disease.
• 82% of panelists voted that surgical resection should be oriented on the post neoadjuvant extent

• Nipple sparing was considered a safe procedure after neoadjuvant systemic therapy (80%)
Conclusions

• Wide range of options for breast cancer surgery
• Wide range of adjuvant therapies

• Adjuvant and neoadjuvant therapies impact surgical options