SSO-ASTRO Consensus Guidance Margins for Breast-Conserving Surgery with Whole Breast Irradiation in Stage I and II Invasive Breast Cancer

Dr. Yvonne Tsang
St. Paul's Hospital

Introductions

- Breast-conserving therapy (BCT) was introduced more than 40 years and became standard practice for more than 20 years.
- BCT followed by whole-breast radiation therapy (WBRT)
- Equivalent survival to mastectomy for stages I and II breast cancer

- Derby S, McGale P, Correa C, et al. *Lancet.* 2011;378:1707-16
- Fisher B, Anderson S, Bryant J, et al. *N Eng J Med*. 2002;347:1233-41

Introductions

- There is still no consensus on what constitutes an optimal negative margin width (3+4)
- Approximately ¼ women attempting BCT undergo re-excision
- ½ of them had negative margin, only to achieve a wider clear margin

- McCahill LE, Single RM, Aiello Bowles EJ, et al. *JAMA*. 2012;307:467-75
- Morrow M, Jagsi R, Alderman AK, et al. *JAMA*. 2009;302:1551-6

Introductions

- Society of Surgical Oncology (SSO), in collaboration with the American Society of Radiation Oncology (ASTRO), convened a multidisciplinary expert panel

- Examining the relationship between margin width and IBTR

Primary question..

- What margin width minimizes the risk of IBTR?

Introductions

- A meta-analysis of margin width and (IBTR) from a systematic review of 33 studies including 28,162 patients

- Tumor histology, patient age, use of systemic therapy and technique of radiation therapy also examined

Results from meta-analysis

- Positive margins (ink on invasive carcinoma or ductal carcinoma in situ) are associated with a two-fold increase in the risk of IBTR compared to negative margins.

- This increased risk is not mitigated by favorable biology, endocrine therapy or a radiation boost.

- Meena S. Moran, Stuart J. Shnitt, Armando E. Giuliano, et al. *Ann Surg Oncol* (2014)21:704-16

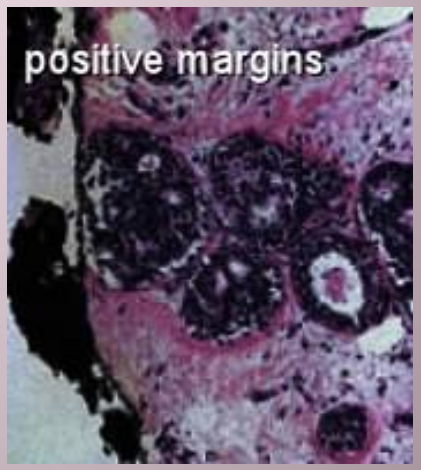
Results from meta-analysis

- More widely clear margins than no ink on tumor do not significantly decrease the rate of IBTR.

- There is no evidence that more widely clear margins reduce IBTR for young patients, unfavorable biology, lobular cancers, or cancers with an extensive intraductal component

- Meena S. Moran, Stuart J. Shnitt, Armando E. Giuliano, et al. *Ann Surg Oncol* (2014)21:704-16

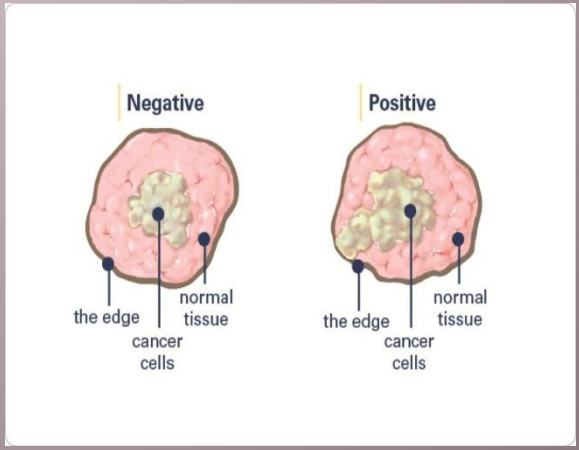
Recommendations – positive margins



- A positive margin
  - ink on invasive cancer or DCIS
  - at least a two-fold increase in IBTR
  - This increased risk in IBTR is not nullified by
    - Delivery of a boost dose of radiation
    - Delivery of systemic therapy (endocrine, chemotherapy, or biologic), or
    - Favorable biology

Recommendations – Negative Margin Widths

- Negative margins (no ink on tumor) minimize the risk of IBTR
- Wider margin widths do not significantly lower this risk
- The routine practice to obtain wider negative margin widths than no ink on tumor is <u>not</u> indicated



Recommendations – Systemic Therapy

- What are the effects of endocrine or biologically targeted therapy or systemic chemotherapy on IBTR?

- The rates of IBTR are reduced with the use of systemic therapy.

- Should a patient who is not receiving any systemic treatment have wider margin widths?

- In the uncommon circumstance of a patient not receiving adjuvant systemic therapy, there is no evidence suggesting that margins wider than no ink on tumor are needed.

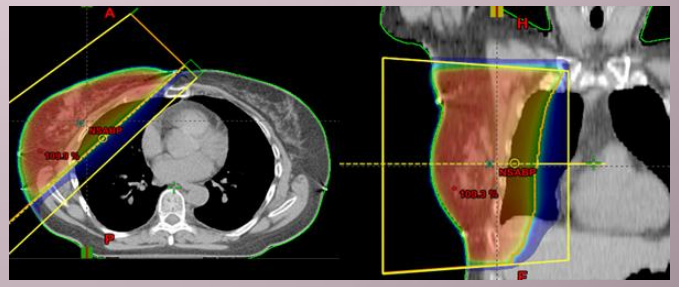
Recommendations – Biologic Subtypes

- Should unfavorable biologic subtypes (triple-negative breast cancers) require wide margins?

- Margins wider than no ink on tumor are <u>not</u> indicated based on biologic subtype

Recommendations – Radiation Therapy Delivery

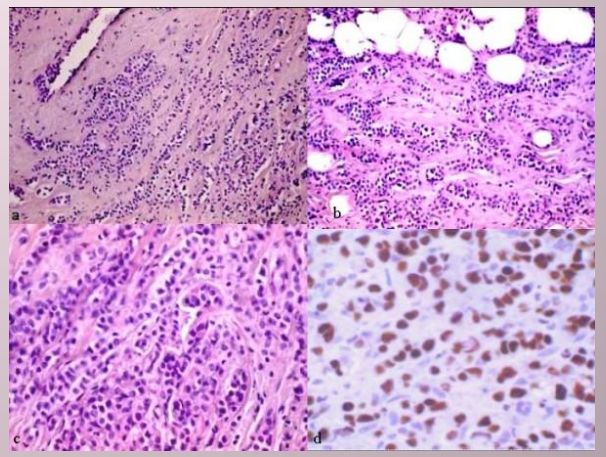
- Should margin width be taken into consideration when determining WBRT delivery technique?



- The choice of whole breast radiation delivery technique, fractionation, and boost dose should not be dependent on the margin width

Recommendations – lobular carcinoma

- Wider negative margins than no ink on tumor are not indicated for invasive lobular carcinoma



- Classic LCIS at the margin is not an indication for re-excision

- The significance of pleomorphic LCIS at the margin is uncertain

Recommendations – Young age

- Young age (≤40 years) is associated with both increased IBTR after BCT as well as increased local relapse on the chest wall after mastectomy
- More frequently associated with adverse biologic and pathologic features
- There is no evidence that increased margin width nullifies the increased risk of IBTR in young patients

Recommendations - EIC

- What is the significance of an extensive intraductal component (EIC) in the tumor specimen, and how does this pertain to margin width?

- An EIC identifies cases that may have a large residual DCIS burden after lumpectomy
- There is no evidence of an association between increased risk of IBTR and EIC when margins are negative

The End