

The Axilla

New Frontiers, Stage it or Not?

Gary J. Whitman, M.D.

MD Anderson Cancer Center Houston, TX

ACOSOG Z0011 Trial

- 1999-2004
- T1-T2 N0 M0 breast cancer
- Breast conserving surgery + whole breast XRT
- 1 or 2 positive LN on SLND with H&E staining
- Randomized to ALND or no further treatment (SLND alone)

Mittendorf and King.

Curr Breast Cancer Rep. 12/12/13

ACOSOG Z0011 Trial

- Intended to include 1900 patients
 - Closed after 891 patients enrolled
 - Slow enrollment
 - Low event rate

Mittendorf and King.

Curr Breast Cancer Rep. 12/12/13

Z0011 Trial

- American College of Surgeons Oncology Group Z0011 trial:
- SLN dissection = ALND
 - Local-regional control
 - Disease-free control
 - Overall survival

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Clinically Node Negative

- SLN dissection is standard for axillary evaluation
 - Single center trials
 - Multicenter trials
 - Prospective randomized trials

SLND

- Excision of smaller # of LN compared to ALND
- Allows for more detailed pathologic evaluation
 - Serial sectioning
 - With/without immunohistochemical staining
- Leading to identification of small volume metastatic disease
 - Including micrometastases
 - Including isolated tumor cells

Mittendorf and King.

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Negative

- ALND omitted
- No adverse effects on:
 - Disease-free survival
 - Overall survival
 - Local-regional control
- Proven in NSABP B-32

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Negative SLN: 10 Year Follow-up (B-32)

- NSABP B-32
- 10 year follow-up
- SLND vs ALND
 - No difference in disease-free survival
 - No difference in overall survival

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10 Year Follow-up

- NSABP B-32
- Local-regional recurrences were uncommon
- 4.2% in ALND group (0.2%-first event)
- 4% in SLND group (0.4%-first event)

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Axillary US

- US detected metastases \neq SLN detected metastases

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Patients with US-Detected Metastases

- US detected:
 - more positive LN
 - larger metastases
 - more likely to have extranodal extension

Axillary Ultrasound Post Z0011

Does ultrasound play a role in staging new breast cancer patients or those suspected of having breast cancer?

MDACC radiologists: YES

MDACC surgeons: YES

Axillary Ultrasound Post Z0011

MDACC:

- Axillary US
- FNA of suspicious LN

NO CHANGE in role of axillary ultrasound after Z0011

Screening

- Screening mammography → earlier, smaller cancers
- Reduced axillary tumor burden

Mittendorf and King.
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Z0011 Trial

- Selected patients with good prognoses
- Selected patients with low axillary tumor burden

IS THE Z0011 POPULATION = YOUR POPULATION?

Mittendorf and King.
Curr Breast Cancer Rep. 12/12/13

Z0011 Trial

- Selected patients with good prognoses
- Selected patients with low axillary tumor burden

YOUR POPULATION LIKELY TO BE NODE NEGATIVE (LIKE Z0011)?
{LOW EVENT RATE}

Mittendorf and King.
Curr Breast Cancer Rep. 12/12/13

Axillary Ultrasound Post Z0011

Axillary US has the ability to detect unsuspected nonpalpable axillary LN metastases

This information → management change

Axillary Ultrasound Post Z0011

Axillary US has the ability to detect unsuspected nonpalpable axillary LN metastases

This information → MANAGEMENT change

(NEOADJUVANT) CHEMOTHERAPY

AXILLARY LN DISSECTION

Axillary Ultrasound Post Z0011

Axillary US: triage

NEGATIVE → SLND

POSITIVE → ALND

→ (NEOADJUVANT) CHEMOTHERAPY

Patients with US–Detected Metastases

US DETECTS MACROMETASTATIC DISEASE

- Larger
- More LN
- More likely to have extranodal extension

SLN DETECTS MICROMETASTATIC DISEASE

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Curr Breast Cancer Rep. 12/12/13

Patients with US–Detected Metastases

US DETECTS MACROMETASTATIC DISEASE

Can be proven with US-guided FNA* or US-guided core biopsy

- *Requires expert cytology support
- If cytology support not available → core biopsy

Axillary Ultrasound Post Z0011

MSKCC approach:

Preoperative US not used routinely to assess axilla

MSKCC Approach Post Z0011

If outside imaging reveals possible nodal metastases, disease managed on basis of # of abnormal LN visualized

- 3 or more abnormal LN → FNA
- If FNA is positive → ALND
- 2 or less abnormal LN → SLND

Mittendorf and King.

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MSKCC Approach Post Z0011

If outside imaging reveals possible nodal metastases, disease managed on basis of # of abnormal LN visualized

1. Careful review of outside images
2. Limitation: not present for real-time assessment
3. Count number of abnormal LN
4. Number of abnormal LN should be documented in report

Axillary Ultrasound Post Z0011

679 patients underwent preoperative axillary US

296 patients with positive LN

(169 detected by axillary US and sampling)

88% FNA

12% core biopsy

Farrell et al. Eur Radiol. 3/5/15

Axillary Ultrasound Post Z0011

Associated with high risk of additional nodal disease:

≥ 3 positive SLNs

Extracapsular extension

Matted nodal disease

(Should look for this finding/report it on US)

Farrell et al. Eur Radiol. 3/5/15

After Z0011

- Axillary US + sampling:
 - Sensitivity = 86.2%
 - Specificity = 100%
 - PPV = 100%
 - NPV = 71.9%

Farrell et al. Eur Radiol. 3/5/15

After Z0011

Patients with nodal metastases identified by US had a mean burden of 7.3 positive LN on histology

- 1 LN on US → 5.2 LN on histology (mean)
- 2 LN on US → 7.5 LN on histology (mean)
- >2 LN on US → 10.1 LN on histology (mean)

Patients diagnosed with SLNB □ mean burden = 2.2 LN

Farrell et al. Eur Radiol. 3/5/15

After Z0011

- Axillary US: essential in guiding appropriate management in breast cancer
- Axillary US + sampling
 - FNA (requires expert cytology)
 - Core biopsy
- Axillary US findings correlate with histopathologic findings
- Axillary US can help to triage patients □ ALND
 - Increased emphasis on # of LN seen on US

Farrell et al. Eur Radiol. 3/5/15