2024 Breast Cancer Congress

with Updates from the 2023 SABCS

Friday, February 2, 2024
12:10 PM – 12:35 PM CST

Surgical Management of Invasive Breast Cancer with SABCS Updates

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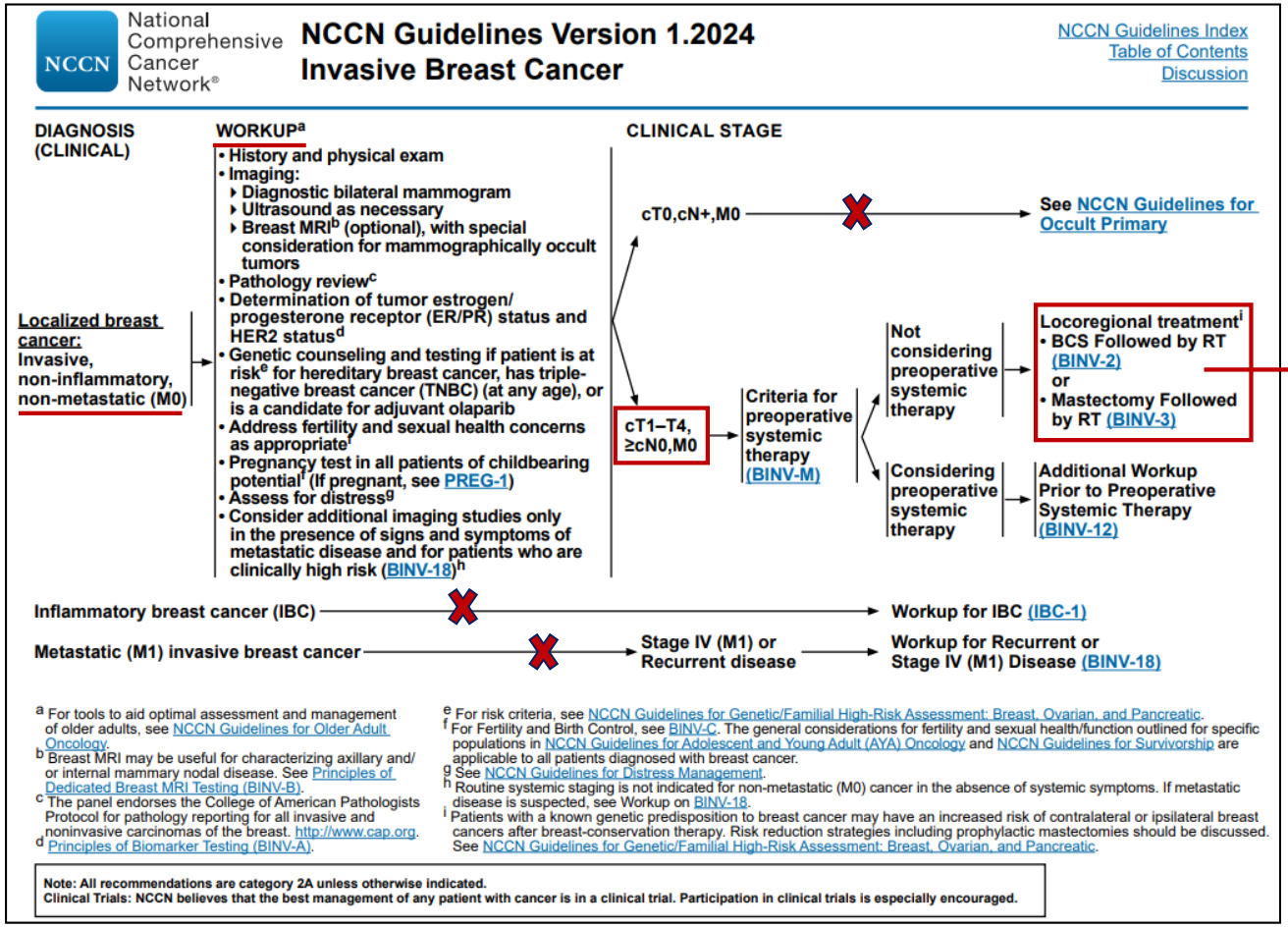
Duke Cancer Institute

NCCN.org – For Clinicians | **NCCN.org/patients** – For Patients | **Education.nccn.org** – CE Portal



LANDMARK TRIALS

- NSABP B-06
- EBCTCG
- NSABP B-17
- NSABP B-24
- CALGB 9343

NEW LANDMARK TRIALS

- ACOSOG 11102

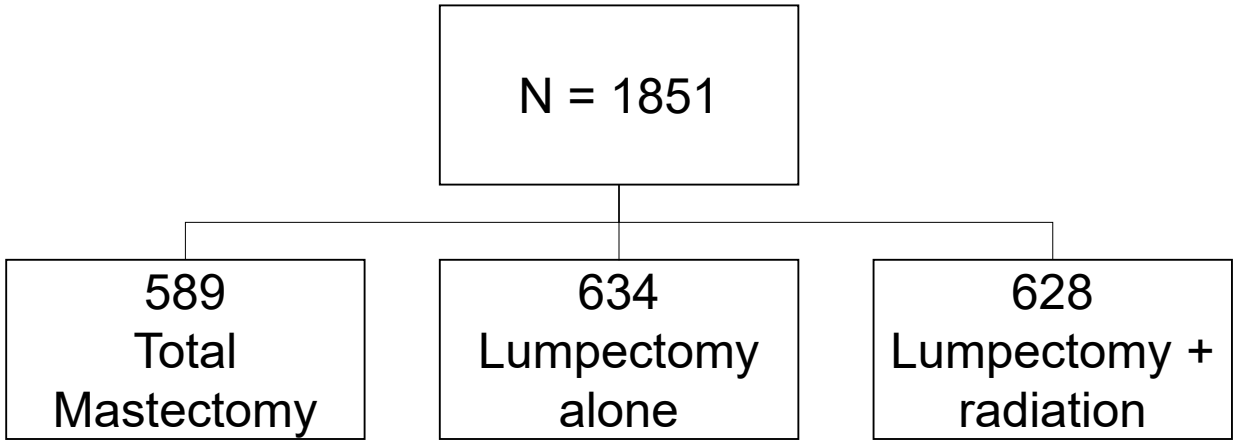
NSABP B-06
Total Mastectomy vs. Lumpectomy (BCS)

- **Why a *mastectomy* at all?**
- **Aim of the Study**:
  - Determine if lumpectomy, with or without XRT was as effective as mastectomy
- **Trial Enrollment**: 1976 – 1984
- **N = 2163**
  - 1851 had follow-up data
- 20-year follow up

- **Eligibility:**
  - Tumors < 4cm
  - Stage I or II (could be cN+)
  - All patients received ALND
  - Patients with positive nodes received chemotherapy (melphalan & fluorouracil)
- **Lumpectomy**:
  - Tumor free surgical margins – *no ink on tumor*
  - Patients with positive margins underwent total mastectomy

Fisher, B. NEJM. 2002; 347:1233-41.

NSABP B-06
Total Mastectomy vs. Lumpectomy (BCS)



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NSABP B-06
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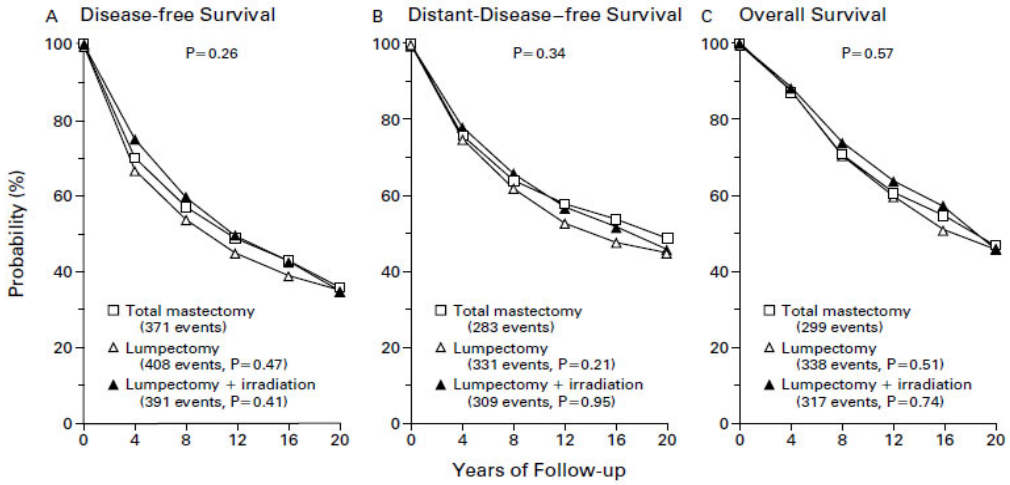
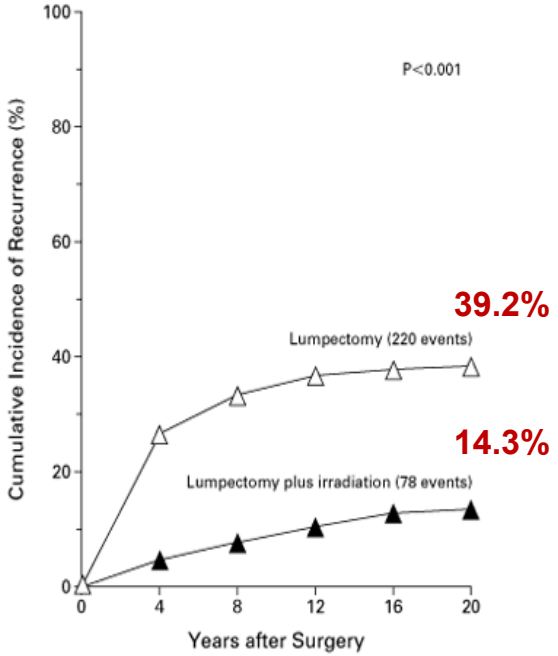


- DFS & Distant DFS & OS: No significant difference among 3 groups
- *Lumpectomy followed by XRT is appropriate therapy for women, provided the margins of resected specimens are free of tumor and an acceptable cosmetic result can be obtained.*

Fisher, B. NEJM. 2002; 347:1233-41.

NSABP B-06
Total Mastectomy vs. Lumpectomy (BCS)

- Significantly fewer LR w/ RT
- Overall LR: (@20 yrs follow-up)
  - BCS alone: **39.2%**
  - BCS + XRT: **14.3%**
- *Independent* of nodal status
  - Node *negative*
    - BCS alone: 36.2%
    - BCS + XRT: 17.0%
  - Node *positive*
    - BCS alone: 44.2%
    - BCS + XRT: 8.8%
- Majority (73%) of LR after BCS alone occurred in first 5-yrs, LR more evenly distributed if XRT



Fisher, B. NEJM. 2002; 347:1233-41.

EBCTCG* Recurrence & Breast Cancer Death: Meta-Analysis

- Effect of Radiotherapy after Breast-Conserving Surgery on 10-year Recurrence and 15-year Breast Cancer Death: **Meta-Analysis of Individual Patient Data** for **10,801 Women** in **17 Randomized Trials**.

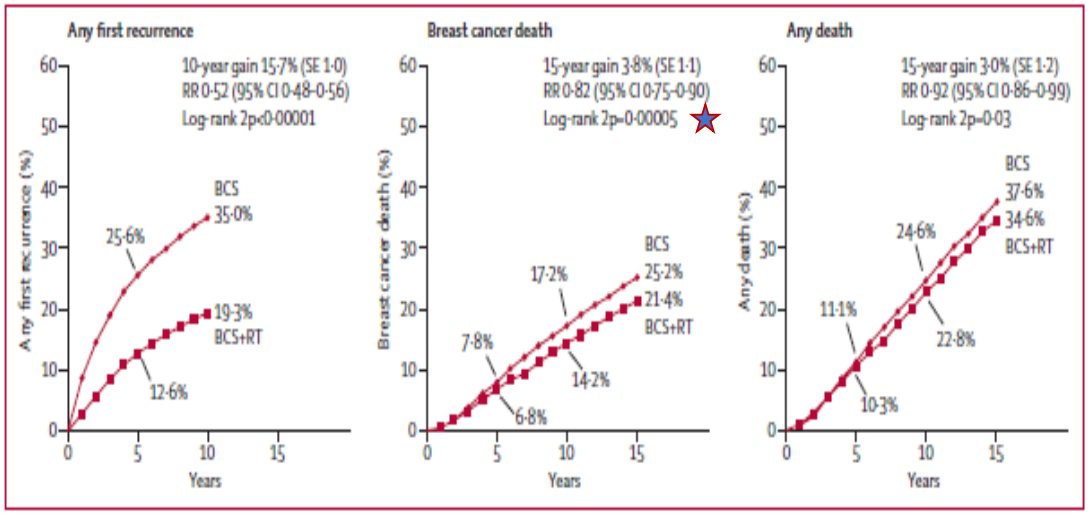


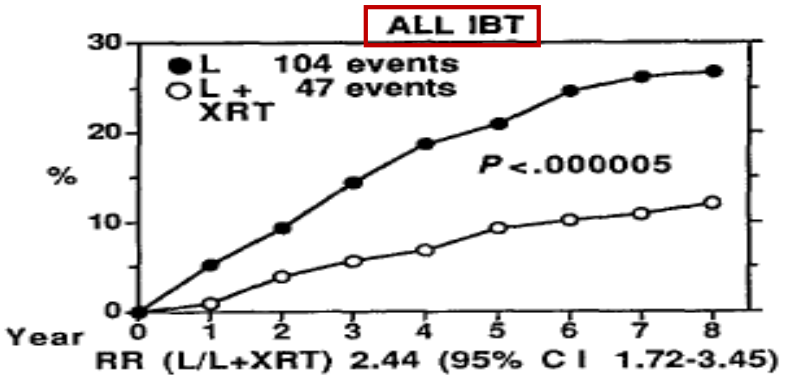
Figure 1: Effect of radiotherapy (RT) after breast-conserving surgery (BCS) on 10-year risk of any (locoregional or distant) first recurrence and on 15-year risks of breast cancer death and death from any cause in 10 801 women (67% with pathologically node-negative disease) in 17 trials

*EBCTCG: Early Breast Cancer Trialists' Collaborative Group

EBCTCG. Lancet. 2011; 378: 1707-16.

NSABP B-17
BCS vs. BCS+XRT (DCIS)

- **B-06 → Same results for DCIS?**
- **Aim of the Study**: Determine if lumpectomy w/ XRT was more effective than lumpectomy alone
- **Trial Enrollment**: 1985 - 1990
- **N = 818**
  - 405 lumpectomy
  - 413 lumpectomy + XRT (50 Gy)
  - Tumor free surgical margins – *no ink on tumor*
- **7.5-year follow up**



- 8-year IBTR – In Breast Tumor Recurrence
  - Lumpectomy Alone: **26.8%**
    - 13.4% as *DCIS*, 13.4% as *invasive*
  - Lumpectomy + XRT: **12.1%**
    - 8.2% as *DCIS*, 3.9% as *invasive*

Fisher, B. JCO. 1998; 16: 441-52.

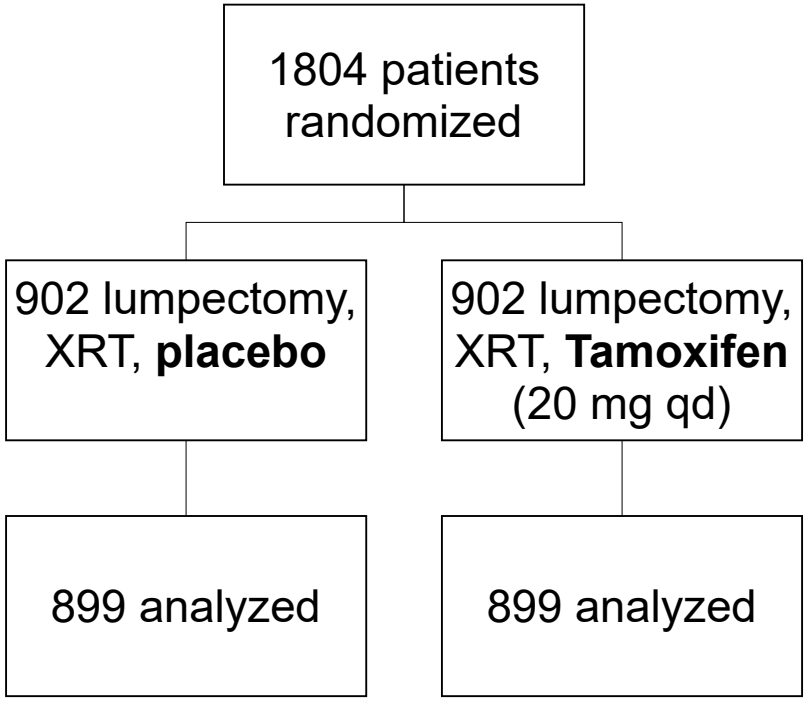
NSABP B-24
BCS+XRT vs. BCS+XRT +Tamoxifen

- **Does adding tamoxifen provide even more benefit?** (DCIS trial)
- **Aim of the study**: determine if tamoxifen was more beneficial than lumpectomy & XRT alone.
- **Trial Enrollment**: 1991-1994
- Double-blind, randomized trial
- **N = 1804** patients with DCIS
  - Lump & XRT +/- Tamoxifen x 5 yrs
- 6 years follow up

- **Primary endpoints**:
  - Occurrence of invasive or non-invasive tumors in ipsilateral & contralateral breasts
- **Positive margins**
  - 16.1% in placebo group
  - 15.5% in Tam group

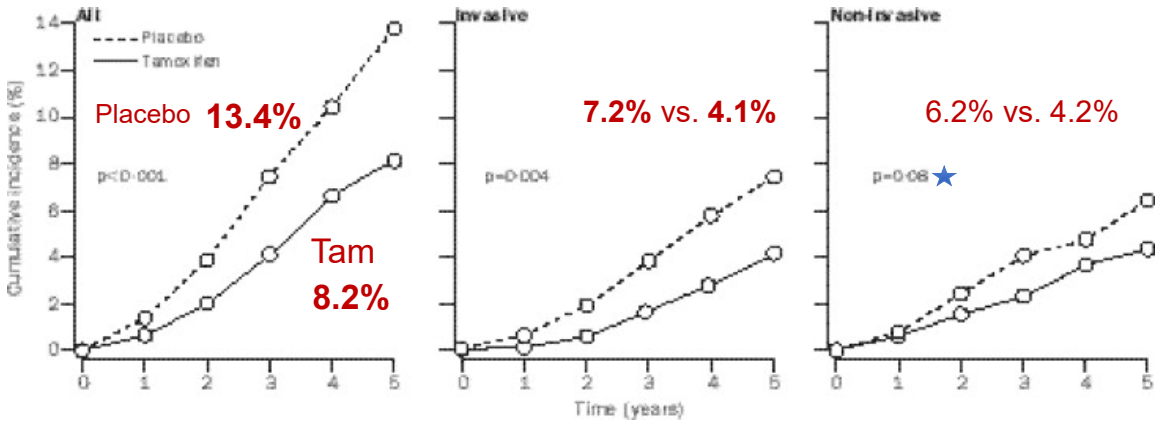
Fisher, B. Lancet. 1999; 353: 1993-2000. 12

NSABP B-24
BCS+XRT vs. BCS+XRT +Tamoxifen



Fisher, B. Lancet. 1999; 353: 1993-2000.

NSABP B-24
BCS+XRT vs. BCS+XRT +Tamoxifen



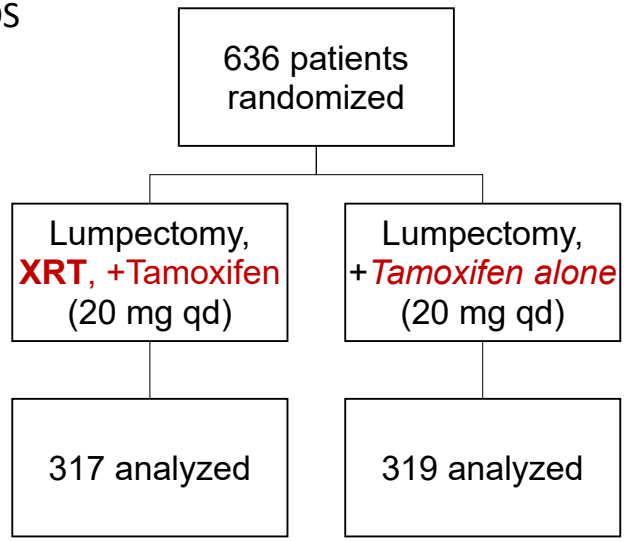
- ***All*** breast events (ipsilateral **&** contralateral) reduced from **13.4%** to **8.2%**
- **37% fewer events** in the tamoxifen group
  - 43% fewer invasive breast cancer events (7.2% vs. 4.1%)
  - 31% fewer noninvasive breast cancer events (6.2% vs. 4.2%)★
- ***The addition of tamoxifen was effective in prevention of all breast cancer events and ipsilateral invasive breast cancer events***

Fisher, B. Lancet. 1999; 353: 1993-2000.

CALGB 9343

- **AIM**: to determine if BCS+Tam is as effective as BCS+RT+Tam in *women >70* with early breast cancer – **do we need RT in *older* women?**
- **Enrollment**: 1994 - 1999
- **N** = 650, Follow up: 12.6 years
- **Eligibility**:
  - ≥70, clinical stage I breast cancer
  - All cN0 – ALND allowed, but discouraged
  - Initially, cT1-2 (<4cm) any ER status, broadened to include cT1, ER positive
- **Procedure**:
  - All: BCS to neg. margin (no tumor on ink)
  - RT group: 45-Gy whole breast and low axilla + 14-Gy tumor bed boost

- **Primary endpoints**: LRR, frequency of mastectomy, breast-cancer specific survival, OS

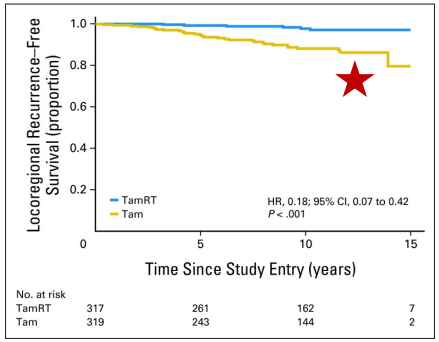


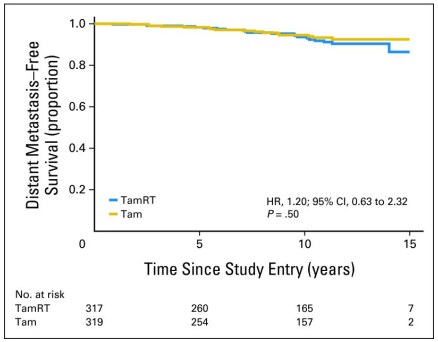
*CALGB: Cancer and Leukemia Group B

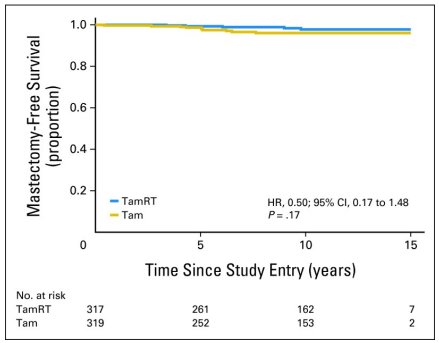
Hughes, KS. NEJM, 2004; 351: 971-977.
Hughes, KS. JCO, 2013; 31: 2382-2387.

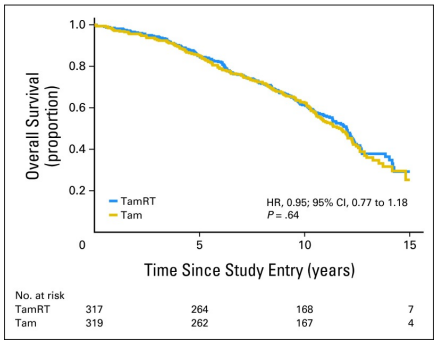
CALGB 9343

- Significant improvement in LRR w/ XRT ★
- ***No difference*** in:
  - (1) time to mastectomy
  - (2) time to distant metastases
  - (3) breast-cancer specific survival
  - (4) overall survival







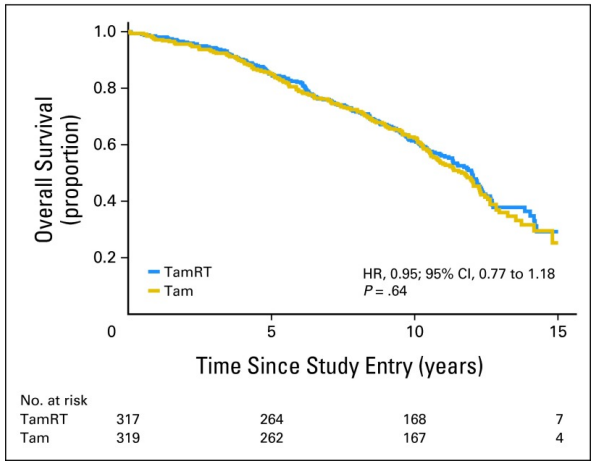


Hughes, KS. NEJM, 2004; 351: 971-977.
Hughes, KS. JCO, 2013; 31: 2382-2387.

CALGB 9343

At 12 years follow up:

- **3%** died of breast cancer
  49% died of *other* causes



10 year data:

TAM	TAM + XRT
10% recurrence	**2%** recurrence
20 IBTR	**6** IBTR
6 IBTR + mets	0
5 axillary recur only	0
1 IBTR + axillary	0

- Age ≥70, w/ cT1N0, ER+ breast cancer, s/p BCS and Tamoxifen, XRT adds ***no significant benefit*** in OS, DFS, or breast preservation.
- **NOTABLE:** In the group w/ *omission* of RT (Tam only), and *omission* of axillary staging, just **3%** (N=7) had an axillary recurrence
- ***Choosing Wisely® campaign*** omission of SLNB in patients >70 years with cT1N0 HR+ breast cancer, planned endocrine therapy

What's NEW in the breast??

Impact of *Endocrine Therapy Adherence* on Outcomes in Elderly Women w/ Early-Stage Breast Cancer undergoing *Lumpectomy without Radiation*

**Real world data*

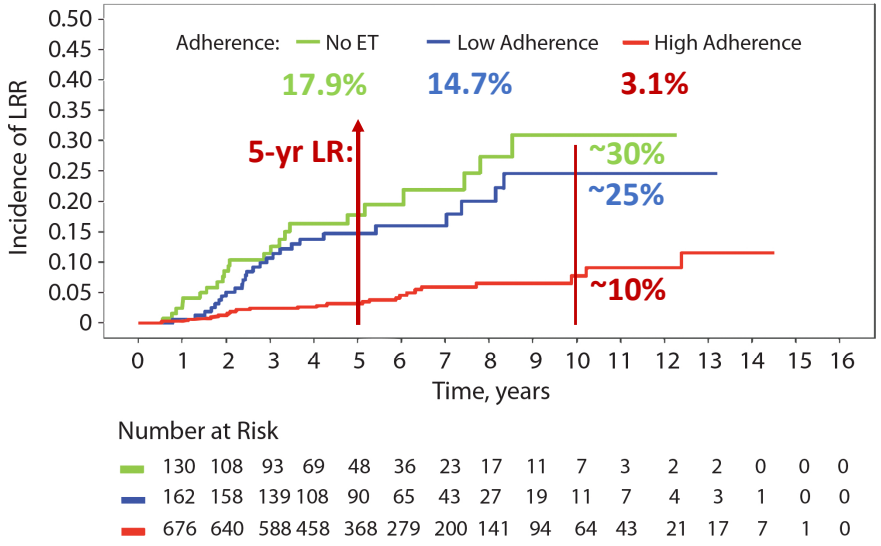
Matar, R. Ann Surg Oncol. **2022**; 29: 4753-4760. 20

Impact of *Endocrine Therapy Adherence* on Outcomes in Elderly Women w/ Early-Stage Breast Cancer undergoing *Lumpectomy without Radiation*

- **AIM**: evaluate the rate of endocrine adherence and the association with LR
- **Data source**: prospectively maintained institutional database
- **N** = 968 patients
- **Inclusion**: 2004 – 2019
  - **Women ≥70, cN0, pT1-2, ER+, BCS w/out RT**

  Stratified adherence to Endocrine as:
  - High: ≥ 80% compliance (70%, N=676)
  - Low: < 80% compliance (17%, N=162)
  - No ET: no prescription (13%, N=130)
- **Follow up**: 53 months

- **Median age**: 77 years (younger age & AI use, more compliant)



No difference in OS, but significant difference in LRR.
Need to identify patients unlikely to have high adherence, consider RT

Matar, R. Ann Surg Oncol. 2022; 29: 4753-4760. 21

ACOSG Z11102

Local Recurrence after Breast-Conserving Therapy in Patients with Multiple Ipsilateral Breast Cancer

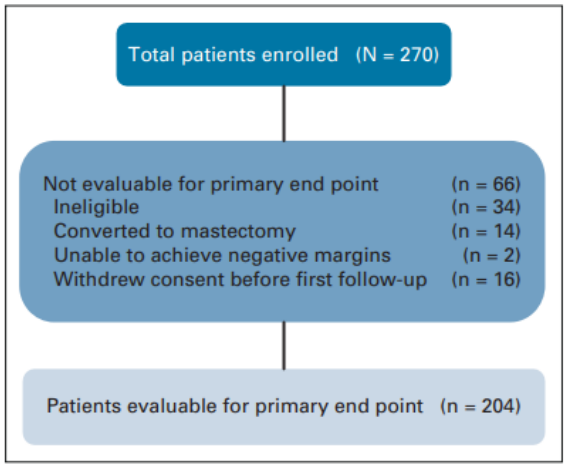
ACOSOG: American College of Surgeons Oncology Group

Boughey, JC. J Clin Oncol. 2023; 41:3184-3193. 22

ACOSG Z11102
BCS for Multiple Ipsilateral Primaries

- **AIM**: Determine oncological safety and LR of BCS for *multiple ipsilateral breast cancer*
  - ***Can we offer BCS with multiple tumors?***
- **Design**: prospective, single-arm
- **Enrollment**: 2012-2016
- **Eligibility**:
  - >40 years, cN0-1, w/ 2-3 foci of biopsy proven breast cancer (at least 1 invasive)
  - Largest <5cm, MRI not required (90% had)
  - At least 2cm normal between sites
  - BCS w/ negative margins (SSO-ASTRO)
  - WBRT w/ boost to each lumpectomy site
  - *Excluded neoadjuvant* patients

- **Endpoint**: cumulative incidence of LR @5 years w/ a priori rate of acceptability at <8% (based on unifocal LRR of 10% at 12 years, target N=200)

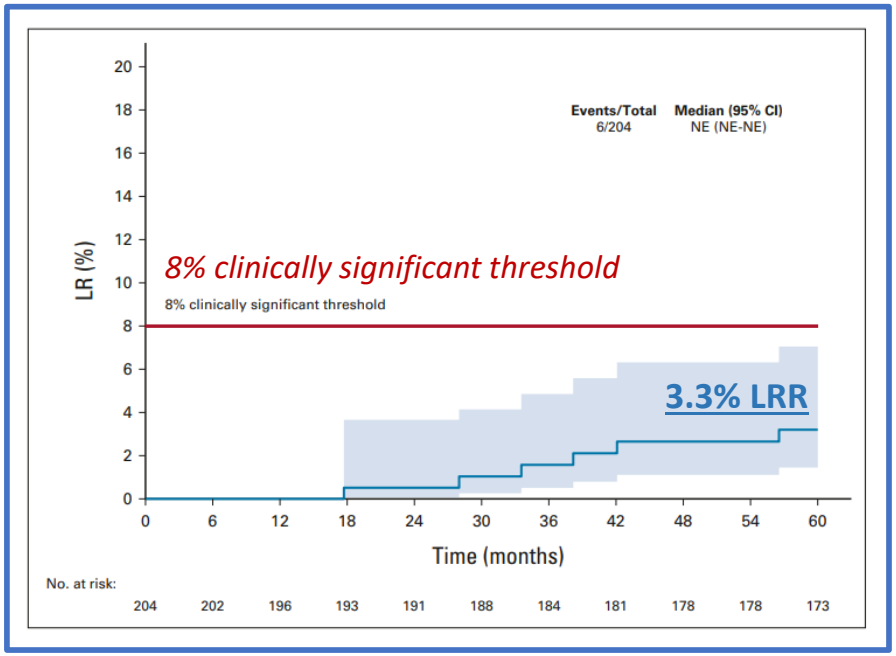


Boughey, JC. J Clin Oncol. 2023; 41:3184-3193.

ACOSG Z11102

BCS for Multiple Ipsilateral Primaries

- Age: median 61 (range 40-87)
- **70%** had *two* lumpectomy sites
- ***Margin re-excision rate:* 23%**
- 83% = ER+, 12% = Her2+
- **96% (195/204) completed RT**
- Median FU = 66 months
- **LRR: N=6** pts, **3.3%**
- *LRR w/ MRI 1.7%, w/out MRI 22%



Boughey, JC. J Clin Oncol. 2023; 41:3184-3193. 24

ACOSG Z11102

BCS for Multiple Ipsilateral Primaries

LR did *not* differ by most factors:

- Patient Age
- Number of sites of cancer (2 vs.3)
- Tumor Biology
- Pathologic pT stage
- Margin status (neg. vs. close)
- Tumor histology
- Number of lumpectomies
- Adjuvant chemotherapy

LR *DID* differ by:

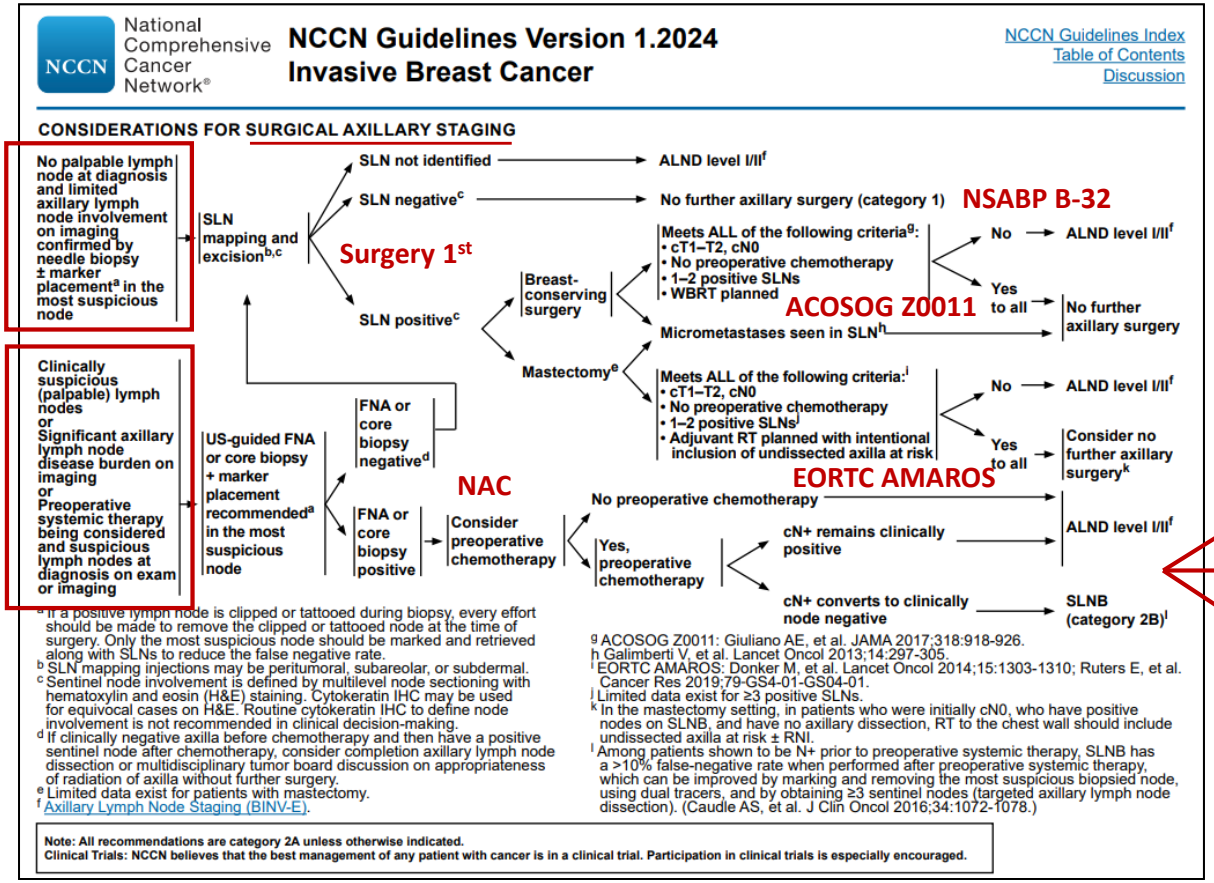
- MRI performed pre-op, *p=0.002*
  - Yes (N=189): LR: 1.7% (0.6-5.2)
  - No (N=7): **LR: 22.6%** (7.9-55.1)
- Adjuvant endocrine in HR+, *p=0.025*
  - Yes (N=175): LR: 1.9% (0.6-5.6)
  - No (N=20): **LR: 12.5%** (3.3-41.5)

BCS may be considered for: *multi-centric breast cancer, cTis-cT2, with at least 1 site invasive, after MRI evaluation, w/ adjuvant RT & boosts, w/ planned endocrine therapy*

Now onto the AXILLA …

cN0 or Low volume disease

cN+ or High volume disease



LANDMARK TRIALS

Surgery 1st

- NSABP B-32
- ACOSOG Z0011
- EORTC AMAROS

Following NAC

- SENTINA
- ACOSOG Z1071
- MDACC TAD

NSABP B-32

SLNB vs. SLNB+ALND in cN0 patients

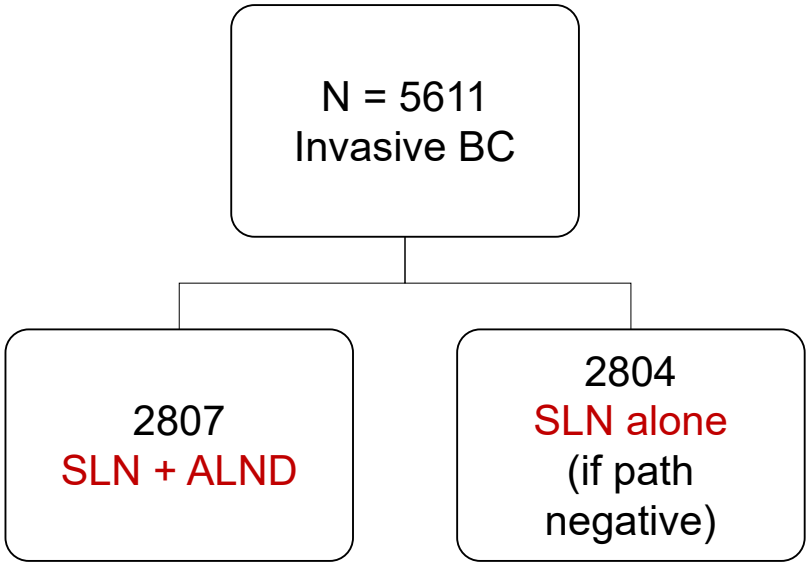
- Is SLNB a reasonable way to stage the axilla in **pN0 pts**?
- **AIM**: determine *whether SLNB achieves the same **survival** & **regional control** as ALND*, with fewer side-effects
- **Trial Enrollment**: 1999 - 2004
- **Enrolled**: N = 5611 (!)
- **Sites**: 80 centers (US/Canada)
- Follow-up: 8-years

- SLNB: Tc^{99} radiotracer & isosulfan blue
- Outcome analyses performed on women with pN0
- Primary endpoint: OS
- Designed to detect a OS difference of 2% between sentinel node-negative patients in the two groups at 5 years.
- Morbidity also evaluated

Lancet Oncol. 2010; 11:927-933.

NSABP B-32

SLNB vs. SLNB+ALND in cN0 patients



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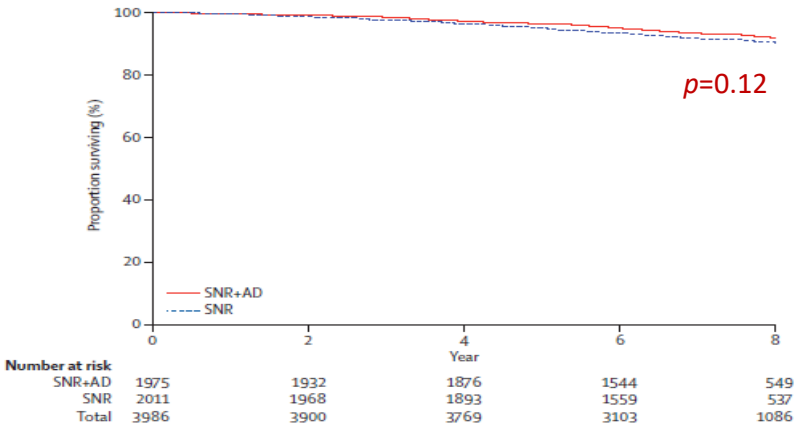
NSABP B-32

SLNB vs. SLNB+ALND in cN0 patients



	SLNB + ALND (N = 1975)	SLNB (N = 2011)
Local recurrence	54 (2.7%)	49 (2.4%)
Regional recurrence	8 (**0.4%**)	14 (**0.7%**)
Distant metastasis	55 (2.8%)	64 (3.2%)

- N = 3989 pN0 sentinel nodes
- ***No difference*** in Overall Survival 8-year K-M estimates:
  - **91.8%** (SLNB+ALND)
  - **90.3%** (SLND)

- **<1% regional node recurrences** after SLNB
- 3-year *lymphedema rates* (≥10% arm volume diff): **14%** (SLNB+ALND) **vs 8%** (SLNB)

Lancet Oncol. 2010; 11:927-933.

NSABP B-32

SLNB vs. SLNB+ALND in cN0 patients

- SLNB detection in Group 1 (w/ALND):
  - 2544 / 2619 = **97.1%**
- **False-negative rate**: **9.8%**
  - Related to number of nodes removed

- **Overall study: False-negative rate (FNR) = 9.8%***
- Women with **1** detected **SLN: FNR = 17.7%**
- Women with **2** detected **SLN: FNR = 10.0%**
- Women with **3** detected **SLN: FNR = 7%**

When the SLN is negative, SLN surgery *alone* with no further ALND is appropriate, safe and effective therapy

Lancet Oncol. 2010; 11:927-933.

ACOSOG Z0011

ALND vs. **No ALND** in **cN0, pN+** (1-2)

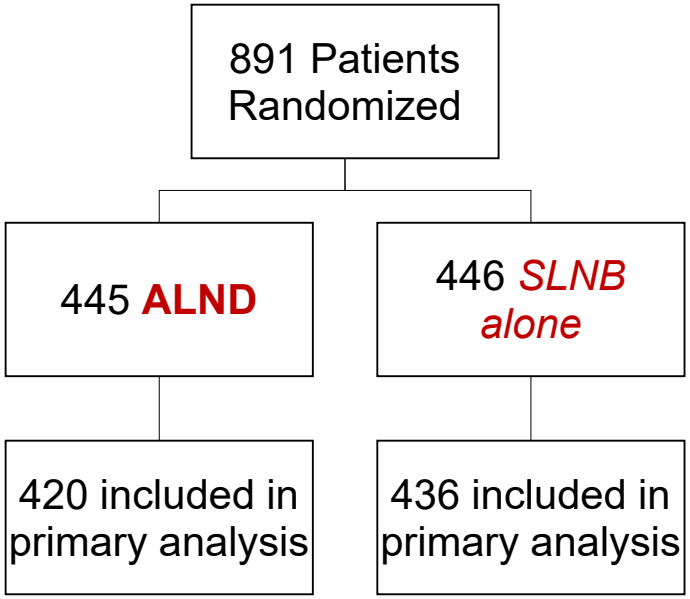
- **AIM:** To determine *if SLNB alone* would provide similar loco-regional control & OS as ALND for women with *pN+*, SLN that was H&E *positive*
- **Trial Enrollment**: 1999-2004
- **Enrolled**: N = 891
  - Target: 1900, 115 sites
  - Closed early – poor accrual, few events
- *Possible omission of ALND in pN+ was considered radical & harmful
  - *Limited potential participation*

- **Eligibility**:
  - Surgery first
  - cT1 – T2 invasive tumors
  - cN0 = "no palpable adenopathy"
  - **1 or 2 positive SLN** on frozen section, touch prep, or H&E permanent section
  - All underwent lumpectomy and tangential whole breast radiation
  - **Randomized**: ALND vs. no add'l surgery
  - Any systemic therapy

JAMA. **2011**; 305: 569-575. 34

ACOSOG Z0011

ALND vs. **No ALND** in **cN0, pN+** (1-2)



JAMA. **2011**; 305: 569-575.

ACOSOG Z0011

ALND vs. **No ALND** in **cN0, pN+** (1-2)

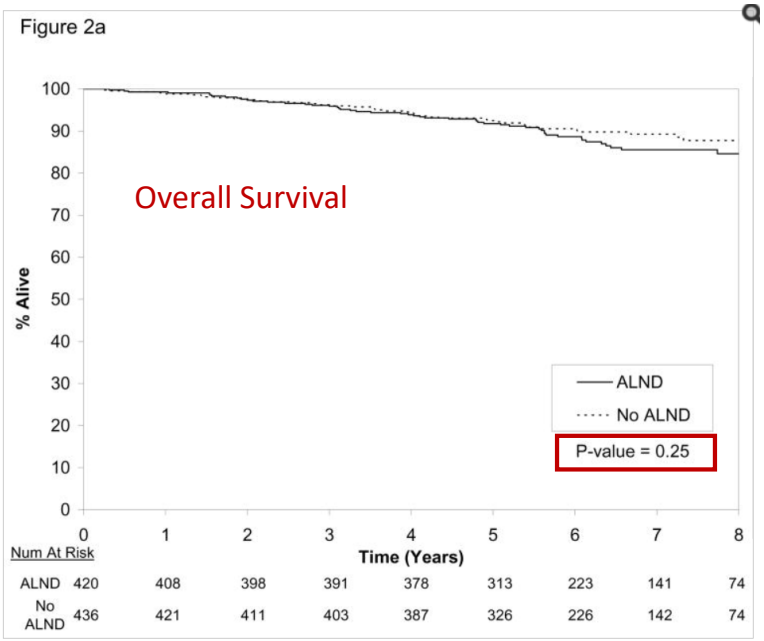
Characteristic	**ALND (n = 420)**	**SLND only (n = 436)**
Age, median	56	54
Tumor size,	1.7cm	1.6cm
Median pT2	32.1%	29.4%
LVI, present	129 (40.6%)	113 (35.2%)
Receptor status		
ER+	82.8%	82.7%
ER-	17.2%	17.3%

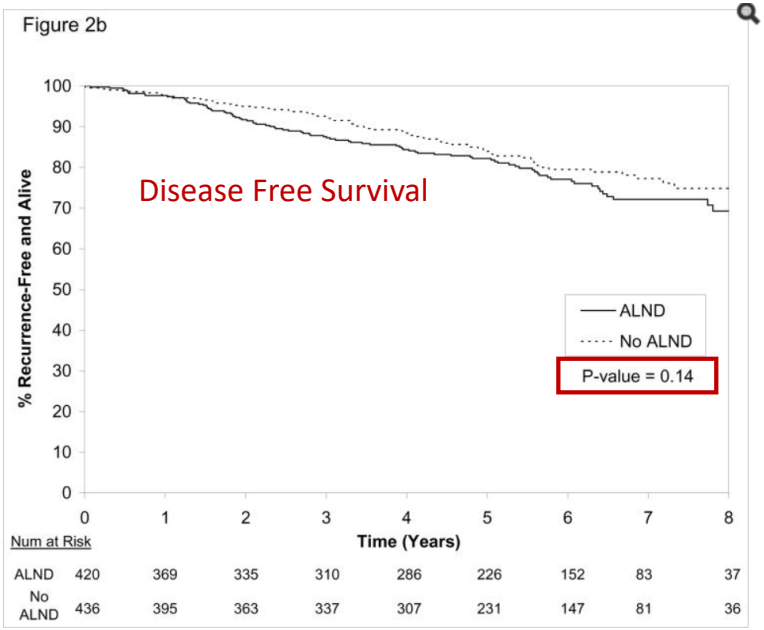
Similar groups except: **Median Nodes = 17** (ALND), **2** (SLNB)

JAMA. **2011**; 305: 569-575.

ACOSOG Z0011

ALND vs. **No ALND** in **cN0, pN+** (1-2)





ACOSOG Z0011

ALND vs. **No ALND** in **cN0, pN+** (1-2)

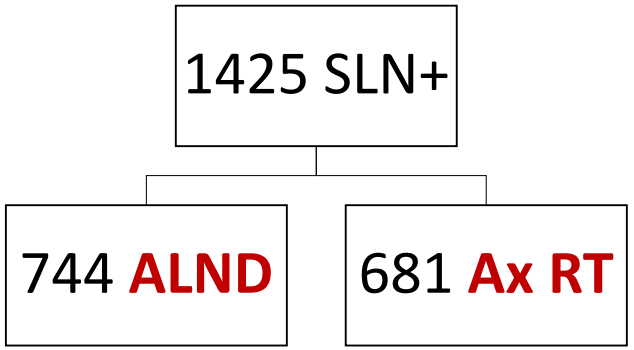
- **Notable:** In the completion ALND group, **27.3% (N=97/355)** had additional metastases in LN removed by ALND
- A quarter of patients who *DID NOT* have ALND, also likely harbored positive nodes
- Z0011 documents the high rate of *locoregional control* achieved with modern multimodality therapy, without ALND – *advances in systemic therapy*
  - 100% of Z0011 pts were pN+, 90% survival at 5-years
  - With NO add'l axillary surgery → 0.9% regional failure (@ 8 years) with 27% residual positive nodes

Recurrence	ALND (n = 420)	SLNB (n = 436)
Local	15 (3.6%)	8 (1.8%)
Regional	2 (**0.5%**)	4 (**0.9%**)
Total Locoregional	17 (4.1%)	12 (2.8%)
Survival	91.8%	92.5%

EORTC AMAROS

ALND vs. **Axillary RT** in **cN0, pN+**

- **AIM**: to determine whether axillary XRT provided similar axillary local control as ALND in patients with a positive SLN.
- **Trial Enrollment**: 2001 – 2010
- **Enrolled**: **N = 4823**, 34 centers in Europe, N = 1425 with SLN+
- Eligibility: cT1-2,cN0 → pN+
- ALND group → **33%** had additional positive nodes
  - Z0011 (27%)
- Allowed mastectomy: 18%

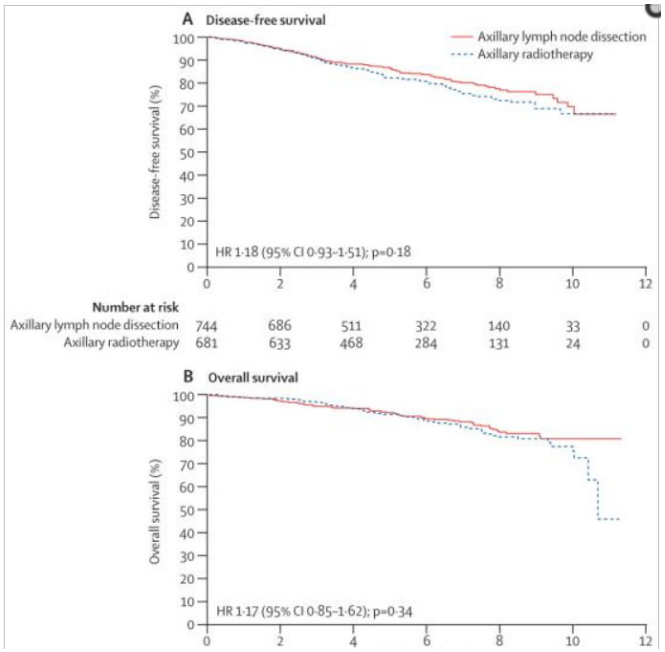


Lancet Oncol. 2014; 15: 1303-1310.

EORTC AMAROS

ALND vs. **Axillary RT** in **cN0, pN+**

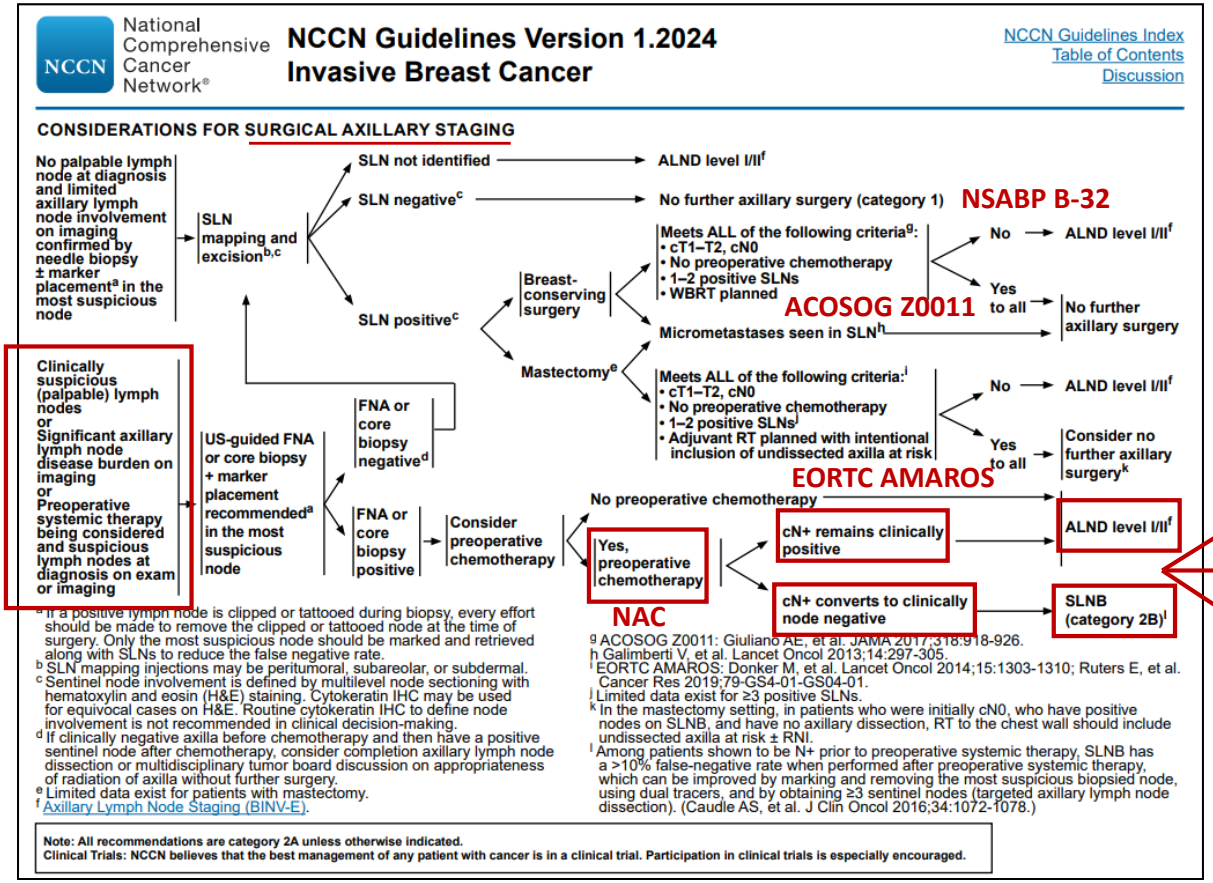
- ***No difference*** **in DFS or OS**



- **5-year axillary recurrence**:
  - **0.4%** (95% CI 0·00–0·92) in the **ALND**
  - **1.2%** (95% CI 0·31–2·08) in the **Ax XRT**

- *ALND and Ax XRT after a positive SLNB provide excellent and comparable axillary control for patients with cT1–2 breast cancer and cN0*
  - *Allowed the inclusion of mastectomy*

Lancet Oncol. 2014; 15: 1303-1310.



LANDMARK TRIALS

Surgery 1st

- NSABP B-32
- ACOSOG Z0011
- EORTC AMAROS

Following NAC

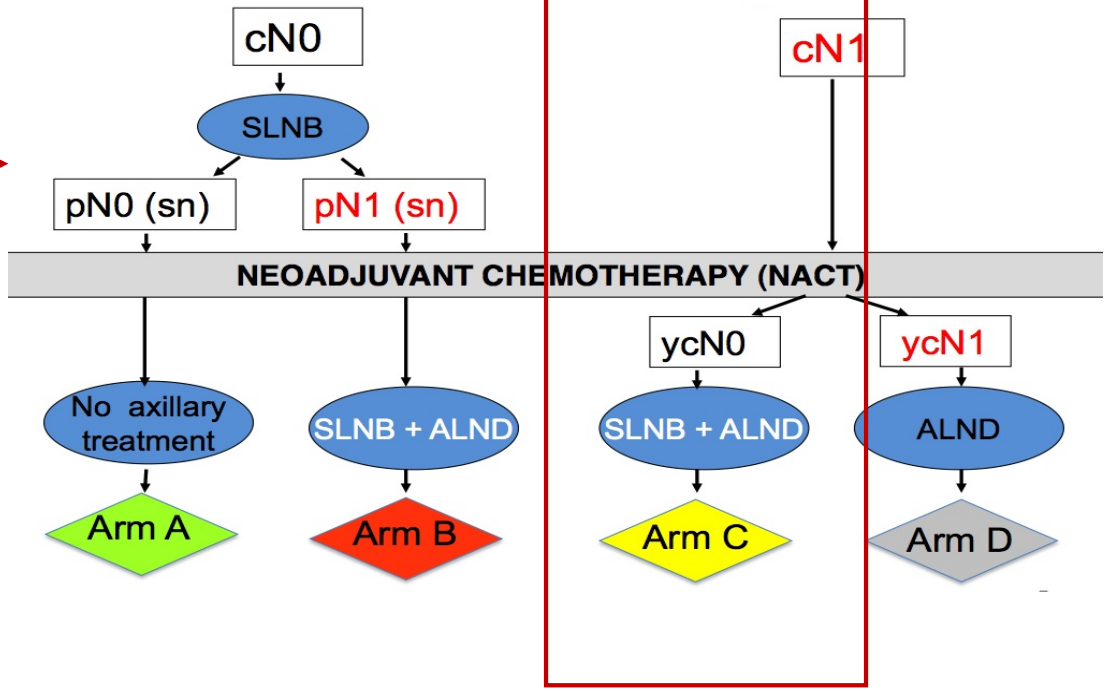
- SENTINA
- ACOSOG Z1071
- MDACC TAD

SENTINA

(SENTInel NeoAdjuvant)

Can we do SLNB after NAC?

- **AIM:** determine accuracy of SLNB in cN+, after NAC and ycN0
- **Design:** 4-arm, randomized study, 100+ institutions
- **Eligibility**:
  - NAC, 6 cycles, w/ anthracycline
- **ARM C: N=590**
  - cN1, NAC, ycN0
  - ycN0 = no longer palpable, normal by US, *or* if morphologically normal structure of hilum & cortex

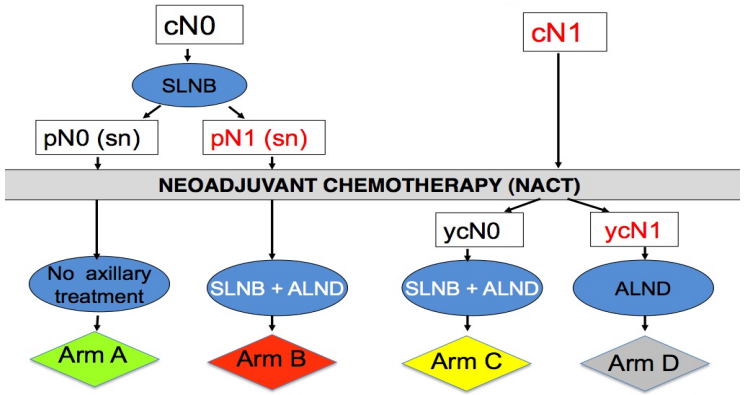


Lancet Oncol. 2013, 14: 609-618.

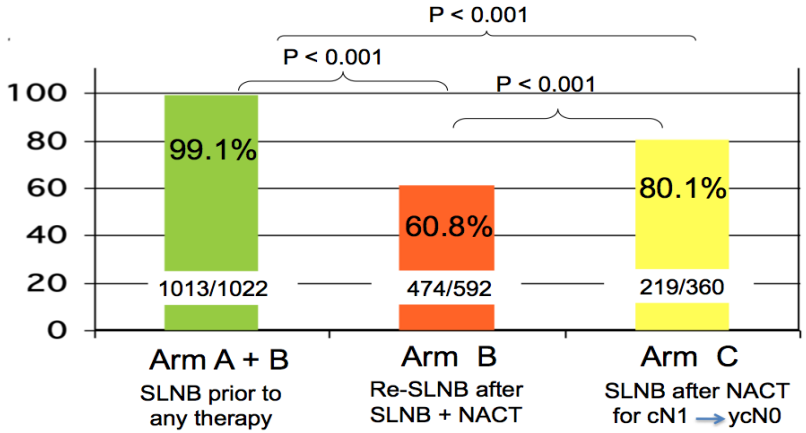
SENTINA

(SENTInel NeoAdjuvant)

- **Arms A & B:** N=1022 (**1st SLNB**):
  - Detection rate 99.1%
- **Arm B:** N=592 (**2nd SLNB**):
  - Detection rate 60.8%
  - False negative rate: **51.6%**
  - **Do not *repeat* SLNBx after NAC**
- **Arm C:** N=360 (**SLNB after NACT**):
  - Detection rate **80.1%**
  - False negative rate: **14.2%**



Sentinel Lymph Nodes Detected and Removed



SENTINA

(SENTInel NeoAdjuvant)

- **<u>Detection</u> of SLNs, Arm C:**
- Overall detection rate w/ radiocolloid *alone*:
  - **77.4%**
  - (302/389; 72.9-81.4)
- Overall detection rate w/ radiocolloid & blue dye:
  - **87.8%**
  - 144/164; 81.8-92.4)

*Significantly increased **detection rate** with ***dual agent*** in MV analysis

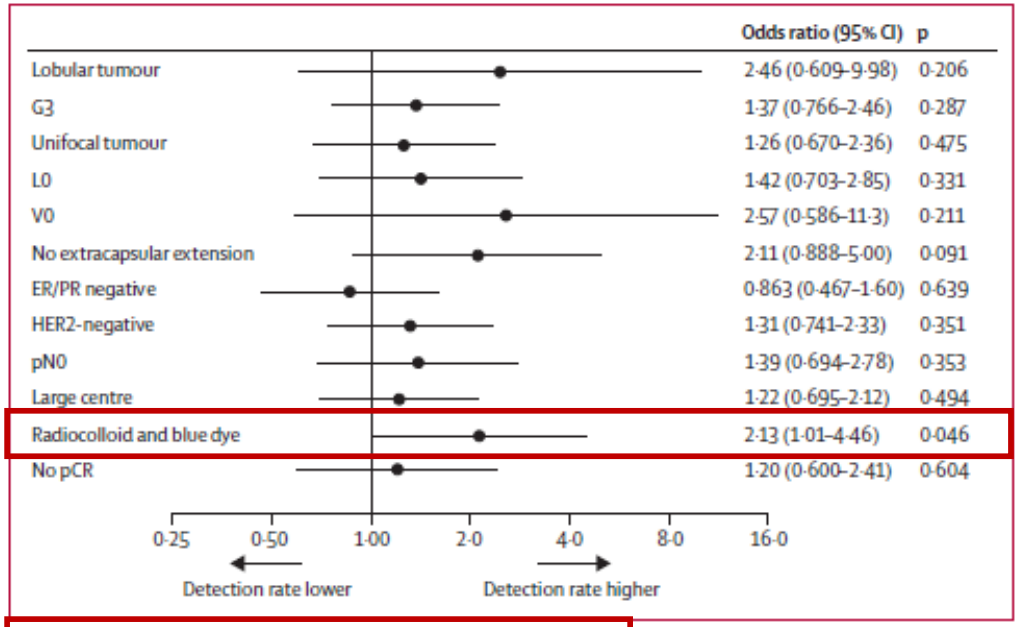


Figure 3: **Multivariate regression analysis for detection rate (arm C)**
G3=grade 3. L0=no lymphovascular invasion. V0=no vascular invasion. ER/PR=oestrogen receptor/progesterone receptor. pN0=pathologically node-negative. pCR=pathological complete response.

SENTINA

(SENTInel NeoAdjuvant)

- **False Negative Rate of SLNs, Arm C:**
- Overall: **14.2%**
- FNRs inversely proportional to number of SLN retrieved
- Accuracy if particularly unfavorable if only 1 or 2 SLN are removed (recall NSABP B-32)
  - **7.3%** if 3 nodes
- Dual agent tracer improves FNRs
  - **8.6%** if dual agent

	Arm B (n=64)	Arm C (n=226)
Overall false-negative rate (n/N; 95% CI)	51·6% (33/64; 38·7–64·2)	14·2% (32/226; 9·9–19·4)
False-negative rate, according to number of sentinel nodes removed		
1	66·7% (16/24)	24·3% (17/70)
2	53·8% (7/13)	18·5% (10/54)
3	50·0% (5/10)	7·3% (3/41)
4	50·0% (3/6)	0·0% (0/28)
5	18·2% (2/11)	6·1% (2/33)
False-negative rate, according to detection technique		
Radiocolloid alone	46·2% (18/39)	16·0% (23/144)
Radiocolloid and blue dye	60·9% (14/25)	8·6% (6/70)

Data are rate (number of patients), unless otherwise stated.

Table 4: **False-negative rate of sentinel-lymph-node resection in patients with positive nodes, according to selected factors**

Overall detection rate and accuracy of SLNB are inferior for patients who convert during chemotherapy to node negative disease

ACOSOG Z1071

SLNB after NAC in **cN+ → ycN0**

- **Trial Enrollment: 2009 - 2011**
- **Enrolled**: N=756, 126 sites
- **Eligibility**:
  - cT0-4, cN1-2, M0 → NAC
  - SLNB and ALND (**all** pts had ALND)
  - (SENTINA "Arm C")
- SLN = hot, blue, palpably abnormal
- Dual agent *recommended*
- Protocol required at least 2 SLN identified
- H&E stained, positive defined as metastases of 0.2mm or larger (no ITCs)

- 80% used dual agent

Identified:

- 12% identified 1 SLN
- 24% identified 2 SLN
- 23% identified 3 SLN
- 14% identified 4 SLN
- 21% identified 5 or more

*58% identified ≥3 SLN**

JAMA. 2013, 310: 1455-1461.

ACOSOG Z1071

SLNB after NAC in **cN+ → ycN0**

- **Overall trial FNR** = **12.6%**
  - Single agent: FNR = 20.3%
  - Dual agent: FNR = 10.8%
  - 2 SLN identified: FNR = 21.1%
  - 3 SLN identified: FNR = 9.1%
- *Conclusion: the **12.6%** was higher than pre-specified threshold of 10%*

Table 3. Factors Affecting the Likelihood of a False-Negative Sentinel Lymph Node Finding in the 310 Women With cN1 Disease at Presentation, 2 or More SLNs Examined, and Residual Nodal Disease After Neoadjuvant Chemotherapy

	False-Negative SLN Findings, No. (Total)	FNR (95% CI), %	Fisher Exact Test, *P* Value
Age, y			
18.0-49.9	20 (150)	13.3 (8.3-19.8)	.73
≥50.0	19 (160)	11.9 (7.3-17.9)	
BMI			
≥25.0	25 (227)	11.0 (7.3-15.8)	.18
<25.0	14 (83)	16.9 (9.5-26.7)	
Palpable, fixed, or matted nodes after chemotherapy[a]			
Yes	10 (52)	19.2 (9.6-32.5)	.17
No	28 (247)	11.3 (7.7-16.0)	
Mapping agents used			
Single	12 (59)	20.3 (11.0-32.8)	.05
Dual	27 (251)	10.8 (7.2-15.3)	
Multiple injection sites[b]			
Yes	5 (70)	7.1 (2.4-15.9)	.21
No	30 (225)	13.3 (9.2-18.5)	
No. of SLNs examined			
2	19 (90)	21.1 (13.2-31.0)	.007
≥3	20 (220)	9.1 (5.6-13.7)	

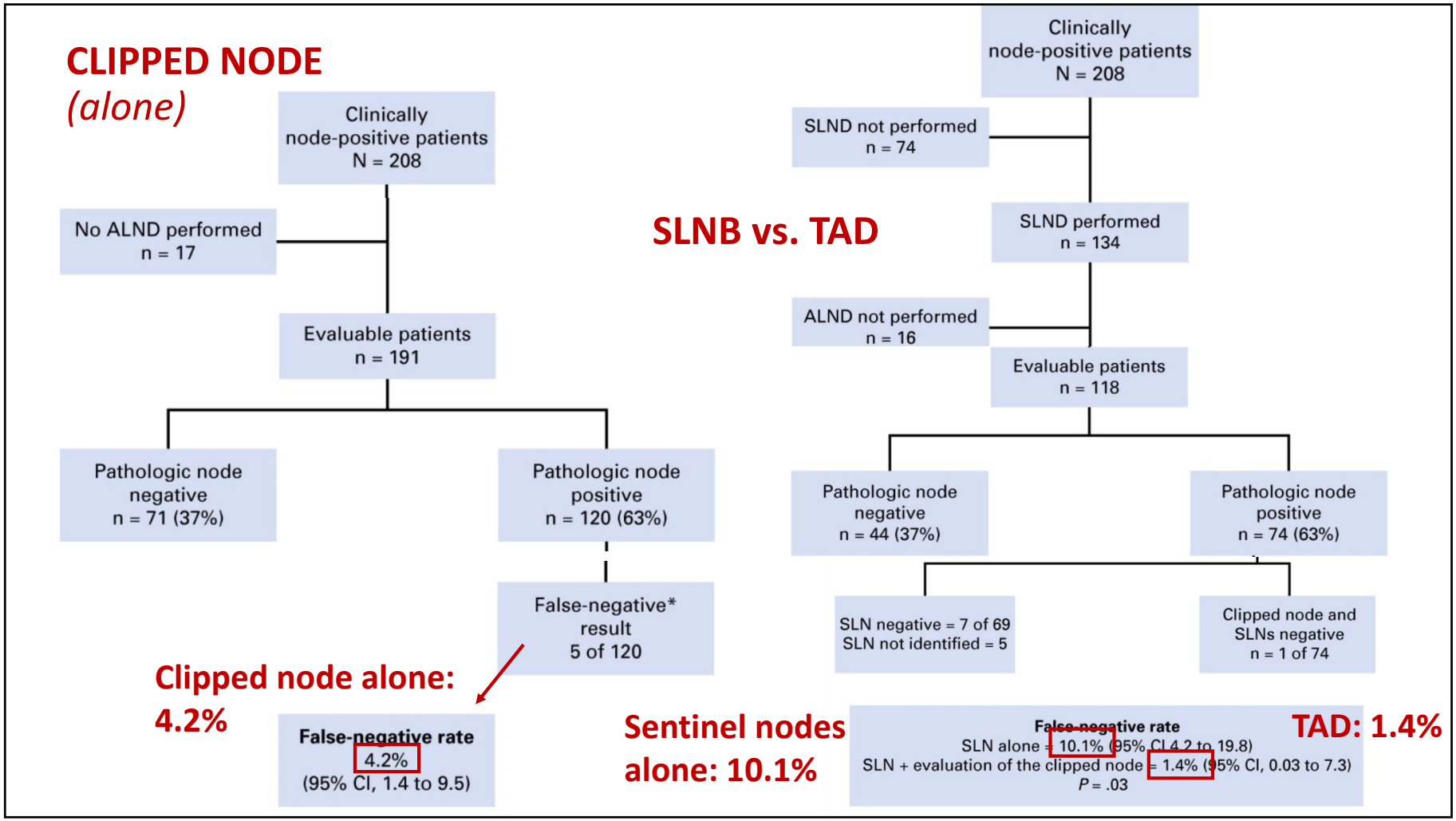
Targeted Axillary Dissection (TAD)

Evaluation of **clipped nodes** after NAC

- **AIM**: to determine:
  - If pathologic changes in a *clipped node* reflects the *status* of the nodal basin
  - If TAD (clipped node + SLNB) improves the FNR
- **Design:** prospective registry, single site
- **Trial Enrollment**: 2011 – 2015
- **Enrolled**: **N = 208** (191 completed ALND)

- **Eligibility**:
  - Axillary US for all patients
  - Biopsy-proven nodal metastases
  - Clipped placed at biopsy
  - NAC
  - SLNB: Tc^{-99}, blue dye, or both
  - ***All*** I^{125} seed for localization

J Clin Oncol. 2016; 34:1072-1078.



Targeted Axillary Dissection (TAD)

Evaluation of **clipped nodes** after NAC

- **CONCLUSION**
  - *Significant improved accuracy of axillary staging post-NAC by performing TAD, (SLNB + clipped node)*
  - FNR for TAD was 2.0% vs 10.1% for SLNB alone
  - Although sample size limits statistical comparison of the two approaches, these exploratory data are promising

- **ACOSOG Z1071** - clipped node (N=170 / 663)
  - 107 pts (63%) for whom the *clipped node* was retrieved as an SLN, the **FNR was 6.8%** (95% CI, 1.9% to 16.5%)
  - Supports clipped node is valuable for FNR

- Clipped node was *not a SLN* (post-NAC) in **23%**
- SLNB w/ *dual tracers* in 65 pts (**55%**)

  **This suggests retrieving additional nodes and using dual agent may have identified clipped node as a SLN*

Similar FNR*: *different (very small numbers)*

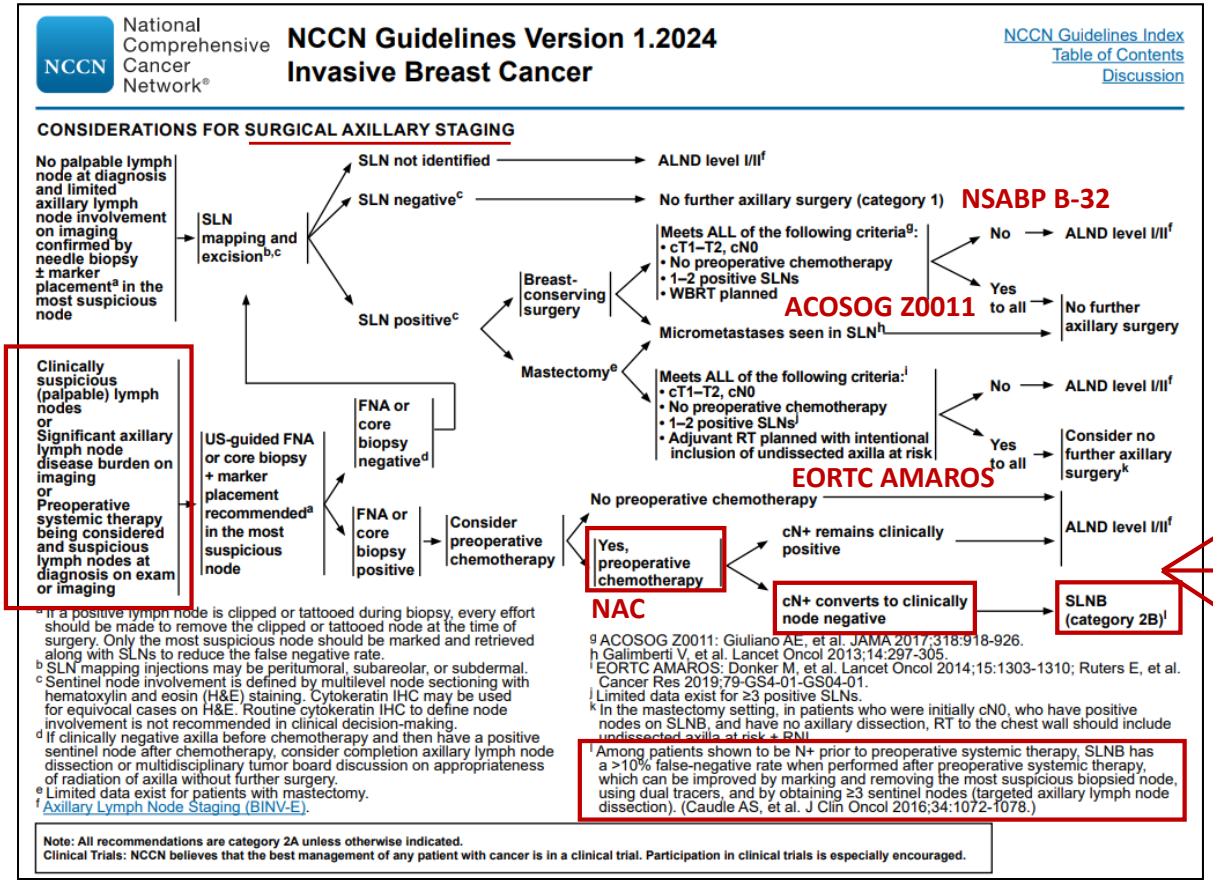
- Single-tracer mapping (10.0%; 3 of **30**)
- Dual agent mapping (10.3%; 4 of **39**)

Similar FNR:

- < 2 SLNs removed (**10.7%**; 6 of 56)
- ≥ 2 SLNs removed (**7.7%**; 1 of 13)

- *What is the FNR w/ dual agent & 3 nodes?*

J Clin Oncol. 2016; 34:1072-1078.



LANDMARK TRIALS

Surgery 1st

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- EORTC AMAROS

Following NAC

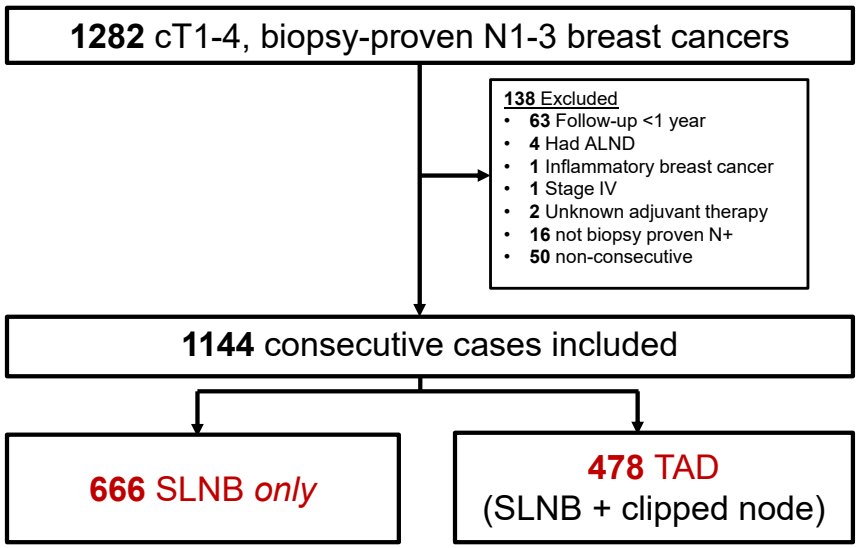
- SENTINA
- ACOSOG Z1071
- MDACC TAD

What's NEW in the axilla??

OPBC-04/EUBREAST-06/OMA Study

Oncological Outcomes following **SLNB** or **TAD** in Breast Cancer Patients downstaging from cN+ → ycN0 with NAC

- **AIM**: to determine:
  - whether the reduction in FNR observed w/ **TAD** translates into a reduction in axillary recurrence
  - rates of axillary recurrence after SLNB (w/ dual tracer) vs. TAD
- **Enrollment**:
  - retrospective, international, multi-center (25 centers, 11 countries),
  - Included cases: 2013-2020
- **Enrolled**: N=1282
- **Inclusion**: cT1-4, cN1-3 (biopsy proven), NAC, ycN0, axillary procedure of choice, **ypN0**
- **Excluded:** ALND, inflammatory, stage IV, <1y FU



SABCS, 2022. Montagna, G. JAMA Oncol, *in press*.

OPBC-04/EUBREAST-06/OMA Study

Oncological Outcomes following **SLNB** or **TAD** in Breast Cancer Patients downstaging from cN+ → ycN0 with NAC

SLNB *only*, N = 666

- Dual-tracer mapping: 666 (**100%**)
- Clip placement: 150/666 (**23%**)
- Clipped node removed (without localization): 129/150 (**86%**)
- Median follow-up: **4.2 years**

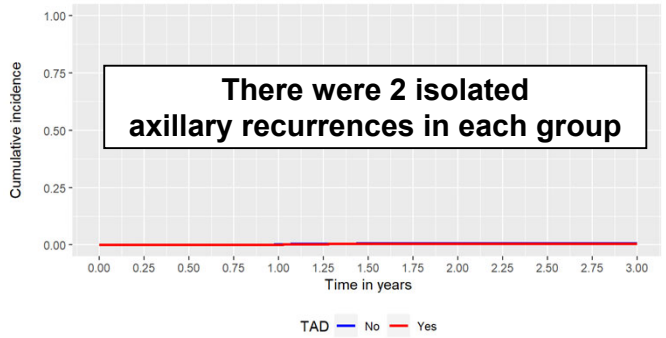
TAD, N = 478 (SLNB + clipped node)

- Dual-tracer mapping: (**78%**)
- Clipped node removed: 466/478 (**99%**)
- Localization technique
  - Radioactive seed: 343/478 (**72%**)
  - Wire: 115/478 (**24%**)
  - Ultrasound: 11/478 (**2.3%**)
  - Other (Magseed, tattoo, wire): 9/478 (**1.9%**)
- Median follow-up: **2.7 years**

SABCS, 2022. Montagna, G. JAMA Oncol, *in press*.

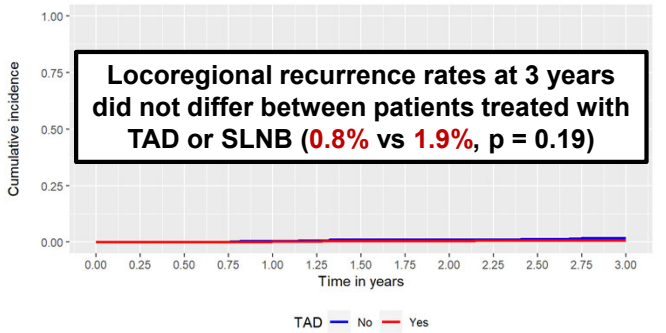
OPBC-04/EUBREAST-06/OMA Study

3-year rate of any axillary recurrence TAD vs SLNB (0.5% vs 0.8%, p = 0.55)



No difference in **isolated axillary recurrences**

3-year rate of locoregional recurrence TAD vs SLNB (0.8% vs 1.9%, p = 0.19)



No difference in **locoregional recurrences**

	Overall n = 1144	SLNB n = 666	TAD n = 478	p value
# of SLNs removed (median, IQR)	3 (3, 5)	4 (3, 5)	3 (2, 4)	< 0.001
# of total LNs removed (mean, SD)	4.2 (2.03)	4.4 (2.04)	3.9 (1.97)	< 0.001

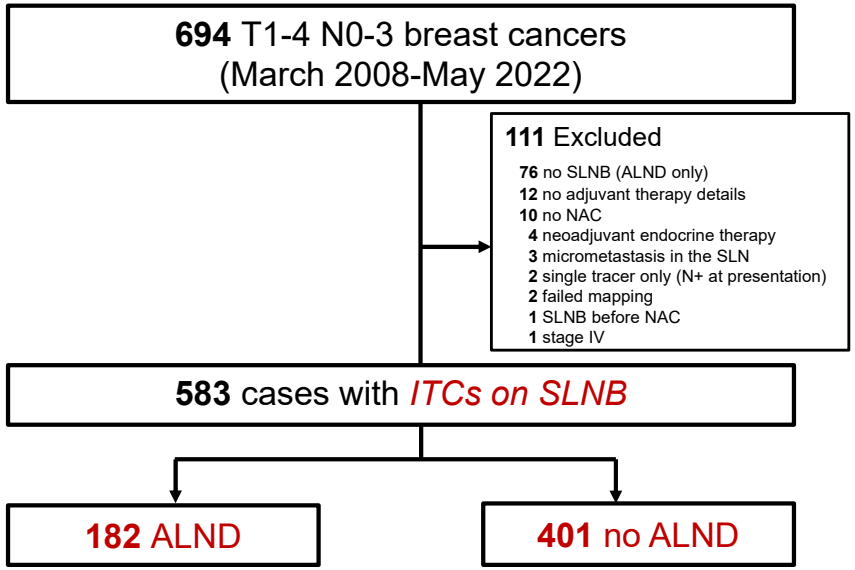
- ***Early axillary recurrence is a rare event***
- ***Safe to omit ALND in ypN0***
- ***Axillary recurrence was not significantly lower in TAD than SLNB***

SABCS, 2022. Montagna, G. JAMA Oncol, *in press*.

OPBC-05 / EUBREAST-14R / ICARO Study

Are ***isolated tumor cells*** *(ITCs)* an indication for **ALND** in Breast Cancer Patients downstaging from cN+ → ycN0 with NAC

- **Background:** residual *micromets* in SLNs after NAC have high % of additional positive nodes in ALND, and ALND is considered standard of care
- **AIM**: to determine
  - How often add'l positive LNs are identified in patients w/ residual *ITCs only*
  - Evaluate rates of recurrence and outcomes between those w/ and w/out **ALND**
- **Enrollment**:
  - retrospective, international, multi-center (62 centers, 18 countries),
  - Included cases: 2008-2022
- **Enrolled**: N=694
- **Inclusion**: cT1-4, cN0-3 (biopsy proven), NAC, ycN0(i+), axillary procedure of choice, **ypN0**
- **Excluded:** directly to ALND, IBC/Stg IV, <1y FU
- **Median follow-up**: 3.2 years



Data presented @ **SABCS, 2023**. Montagna, G, et al.

OPBC-05 / EUBREAST-14R / ICARO Study

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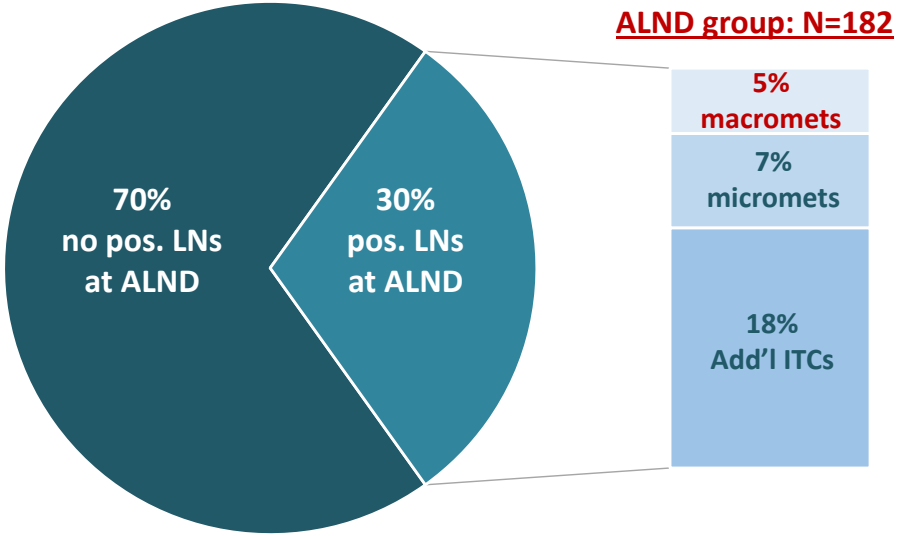
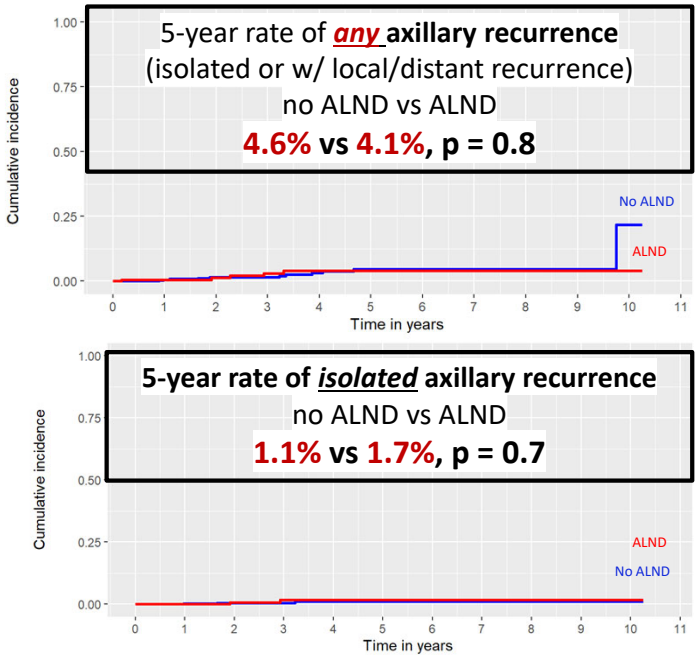


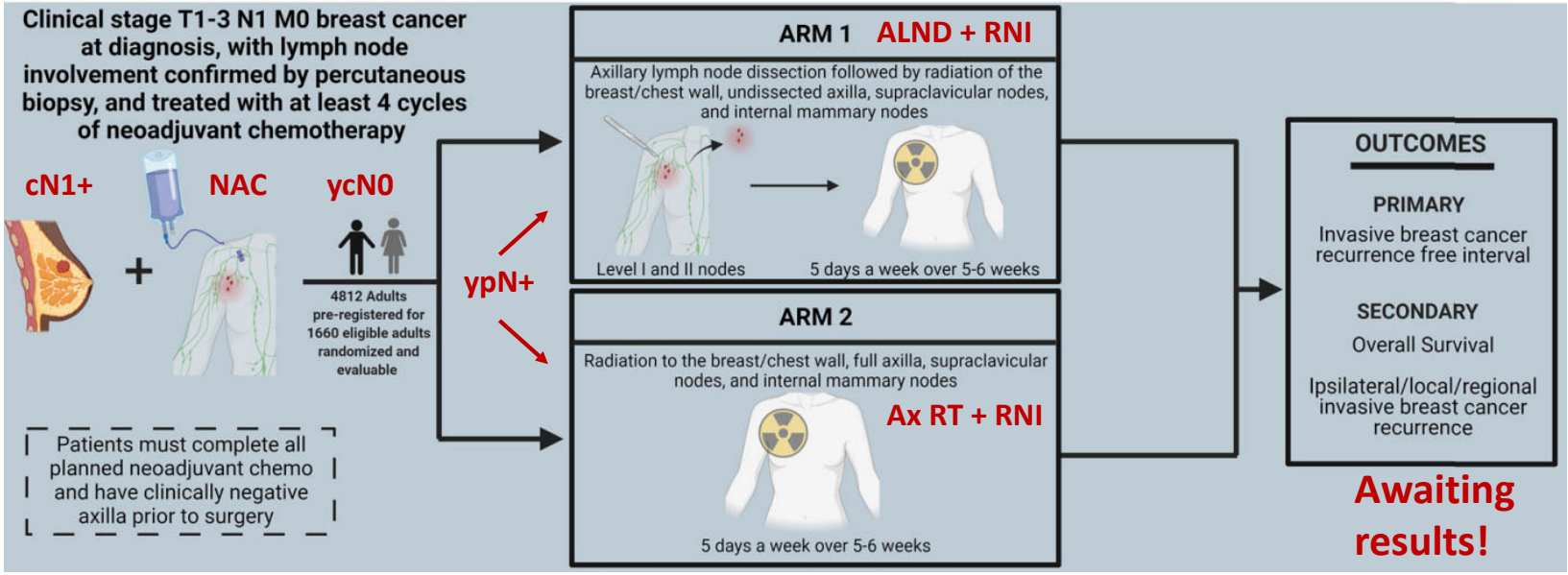


Data presented @ **SABCS, 2023**. Montagna, G, et al.

**not standard of care at this time!*

Comparison of ALND vs. Axillary XRT for patients w/ SLNB-*Positive* Breast Cancer after Treatment w/ NAC Alliance 11202

AIM: *Can axillary radiation be used in lieu of ALND in patients with residual disease after NAC?*



PI: Judy C. Boughey, MD – Mayo Clinic
NCT: 01901094 – Phase III, randomized, multi-institutional

Ann Surg Oncol. 2022; 29:1526-1527.

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An alliance of leading cancer centers devoted to patient care, research, and education

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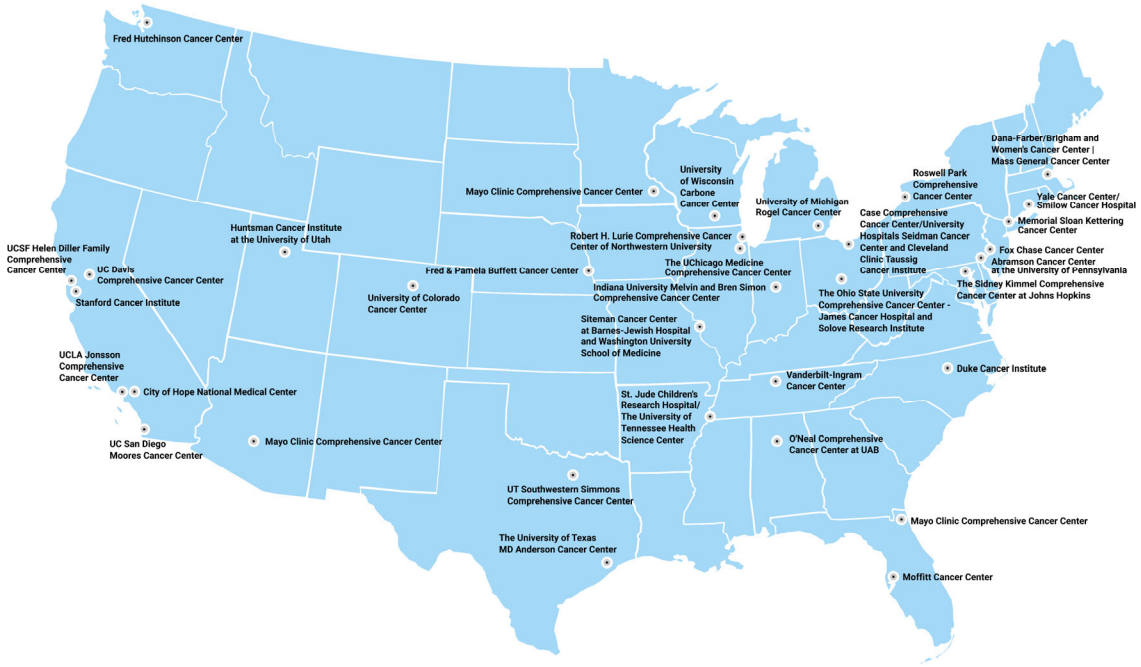
To improve and facilitate quality, effective, equitable, and accessible cancer care so all patients can live better lives

Our Vision

To define and advance high-quality, high-value, patient-centered cancer care globally



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