



Memorial Sloan Kettering
Cancer Center

Future Directions in Multidisciplinary Breast Cancer Care: The Surgical Perspective

Atlanta Breast Cancer Conference

Atlanta, GA

19 September 2026

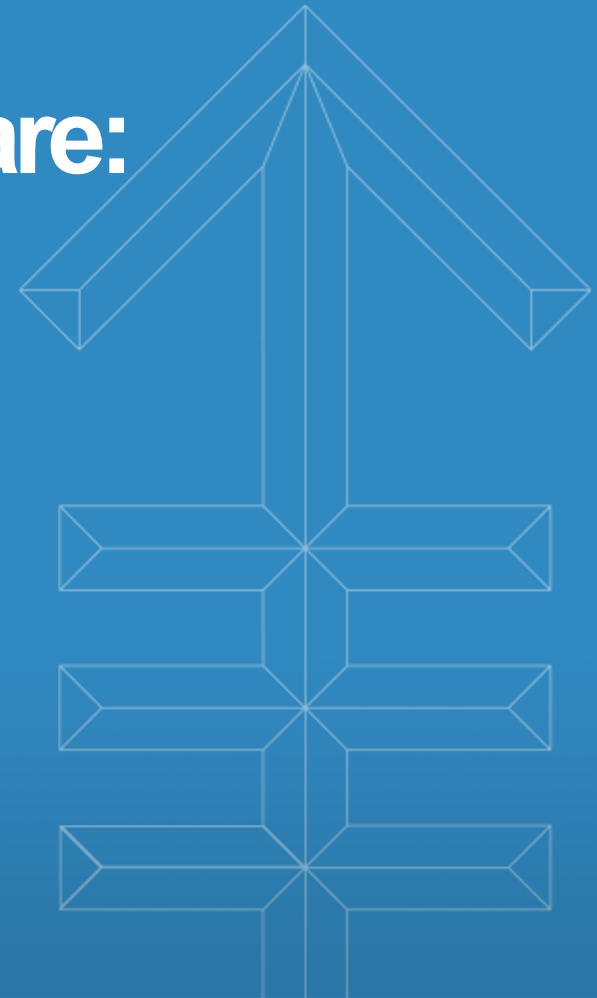
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Disclosures

None

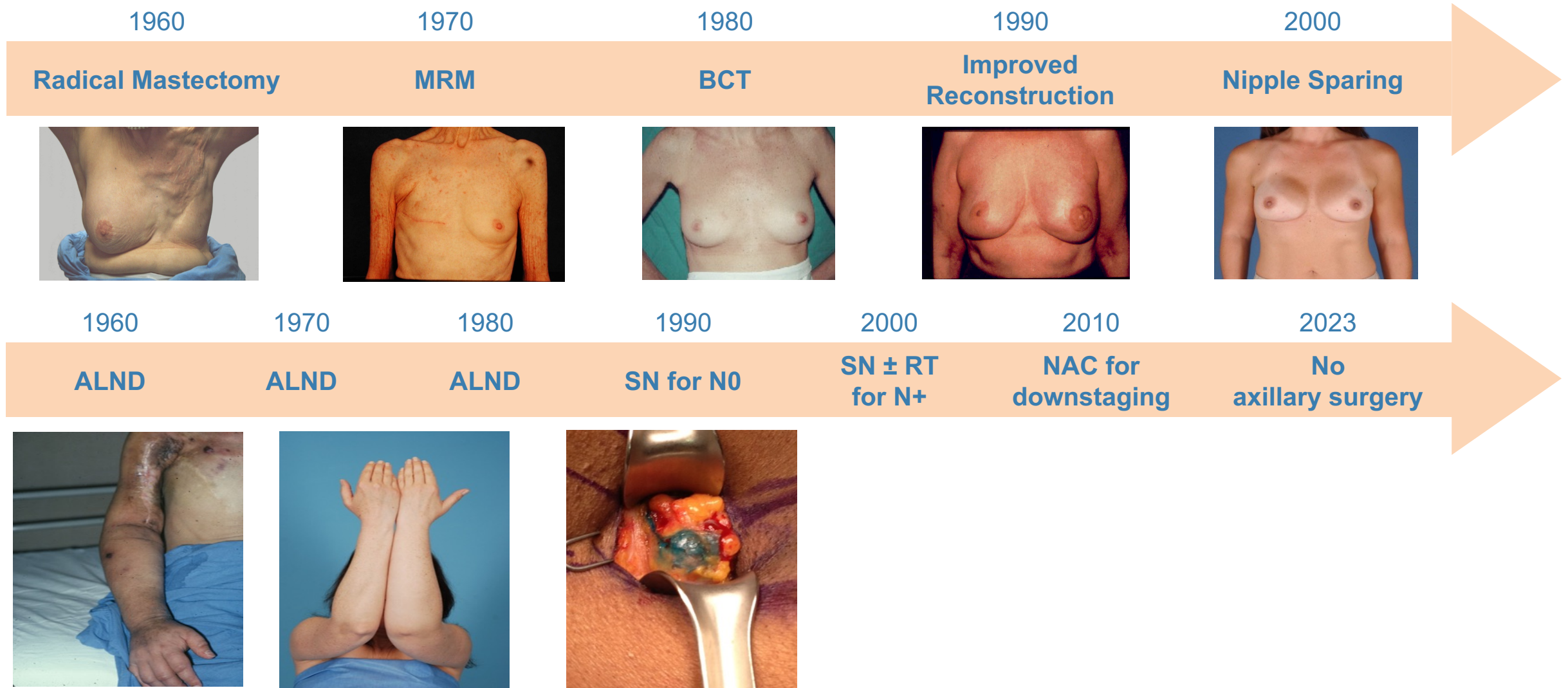
Breast Cancer Management Is a Success Story

Why do we need to change?

- Improved outcomes
- Lots of therapeutic options
- Therapeutic de-escalation

Long history of multidisciplinary care!

Evolution of the Surgical Therapy of Breast Cancer



Evolution of Radiotherapy

Who

BCT

WBRT
Everyone

Age < 65-70 years

No RT for
postmenopausal ER+,
low biologic risk

Mastectomy

≥ 4 positive nodes

Any nodal involvement

None if pCR post NAC

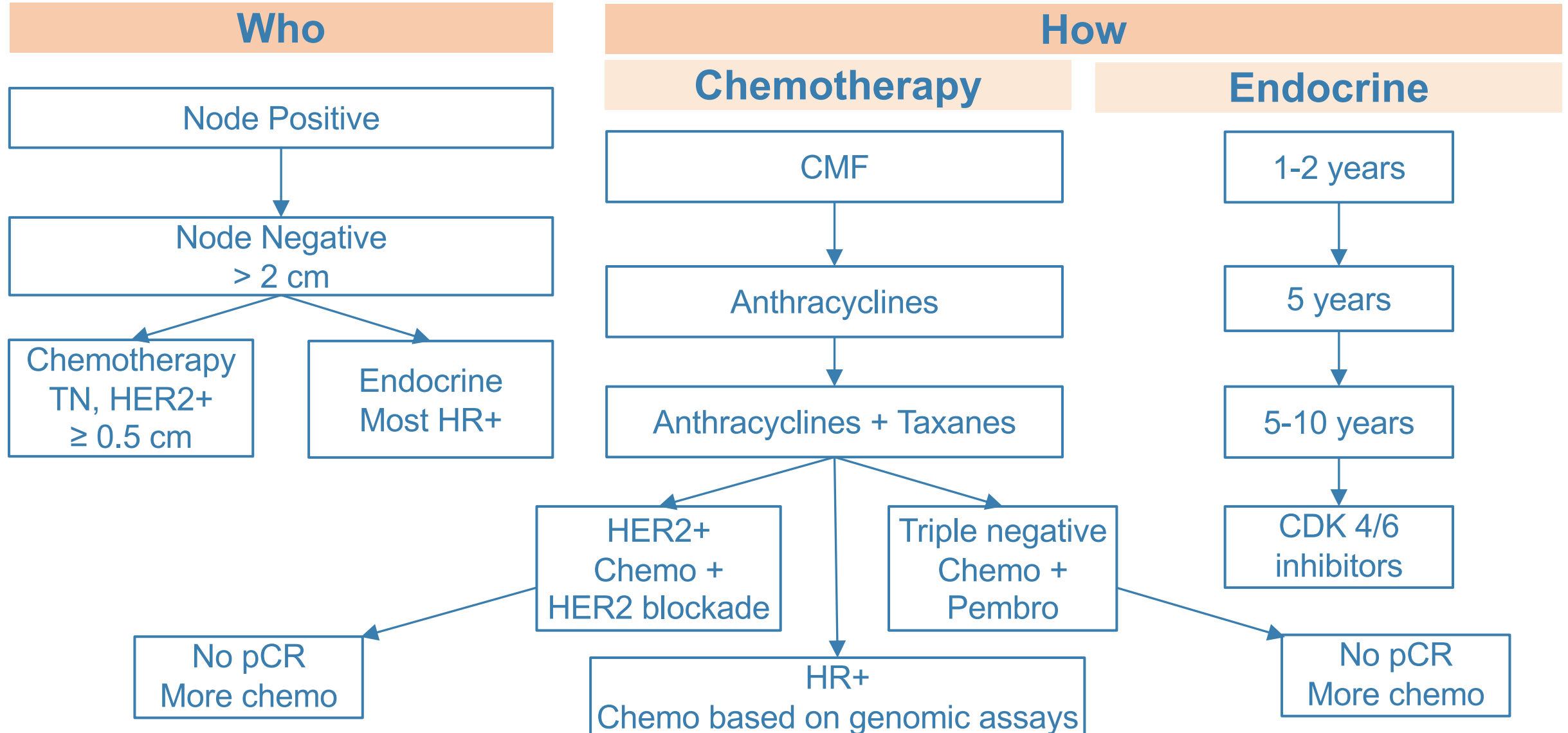
How

WBRT x 6 weeks

Hypofractionated WBRT
5 days–3 weeks

Accelerated partial breast RT
for low risk
with axillary staging

Evolution of Adjuvant Systemic Therapy



The Problem



- Historically, we have practiced sequential multimodality therapy rather than true multidisciplinary care
- The rapid pace of change makes it difficult to know what is standard in other disciplines
- We don't know the outcome of simultaneous de-escalation of multiple therapies
- Loss of anatomic staging due to surgical de-escalation leads to uncertainty

Functional multidisciplinary teams *should* address these issues

Evidence suggests this isn't happening, even for relatively simple things

The Future

- Better communication about evolving standards in our disciplines
- Less rigidity about evidence
 - More nimble clinical trials
 - High-quality real-world datasets to address outcomes of multiple de-escalations
- More and better patient-reported outcomes
- Becoming more confident with uncertainty in traditional anatomic staging as the molecular era continues to re-define prognosis and treatment

Knowledge Gaps

Omission of SLNB in Patients ≥ 70 with HR+/HER2- Cancer

- Favorable biology
- Chemotherapy decisions driven by Oncotype score and overall health status
- Not necessary for local control

	n	Age	Eligibility	Median f/u (years)	Nodal recurrence
CALBG 9343	200	≥ 70	cT1N0	12.6	3%
IBCSG 10-93	239	≥ 60	cN0	6.6	3%
Milan	110	≥ 65	cT1N0	5	1.8%

Recommendations Regarding Axillary Staging in Women Age ≥ 70 Years with HR+/HER2- Cancers

SSO Choosing Wisely

Avoid SLNB for early stage disease patients

www.choosingwisely.org

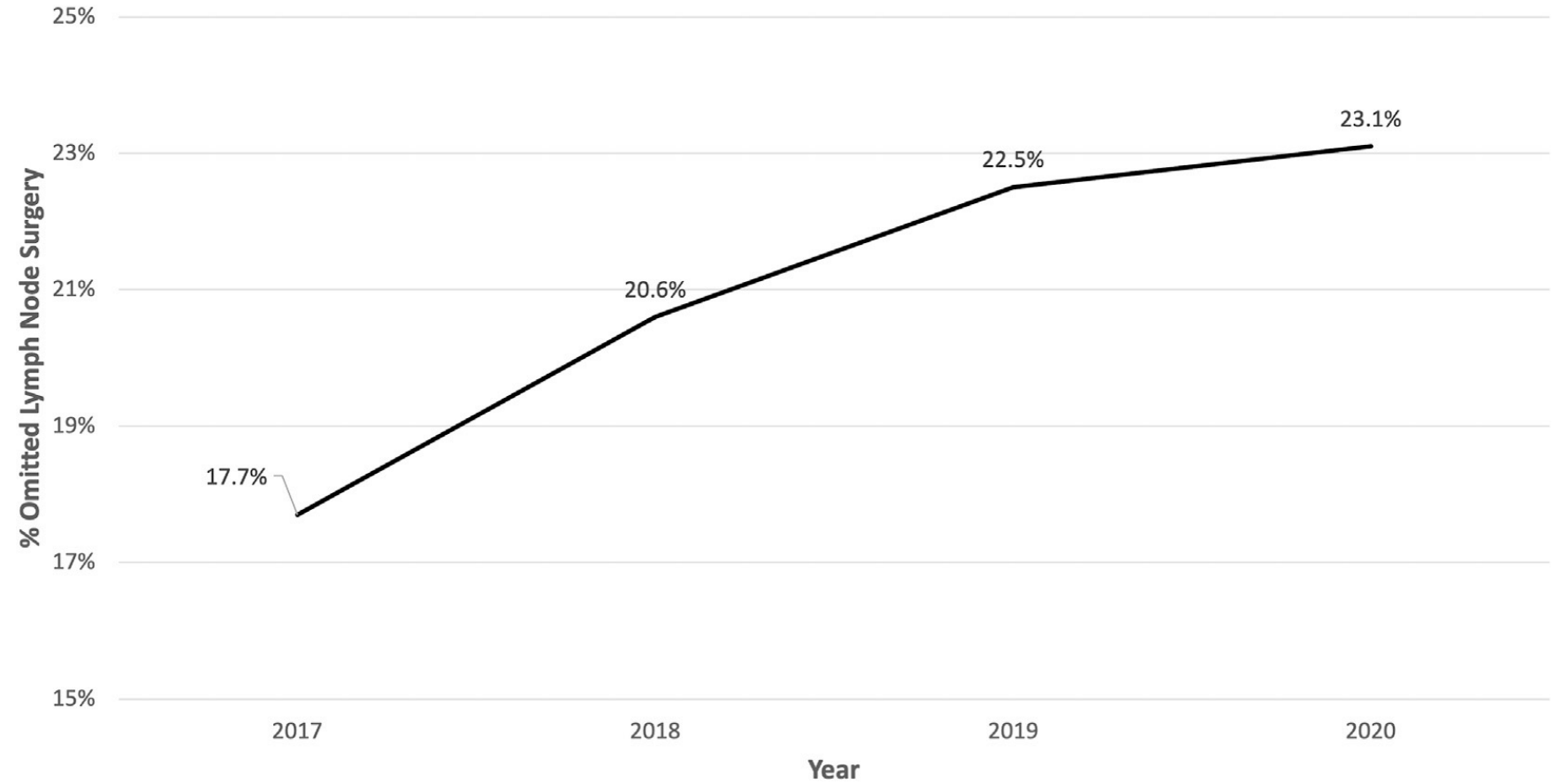
NCCN

SLNB “optional” in early stage disease

Gradishar W, J Natl Compr Cancer Netw 2017;15:433

Omission of Lymph Node Surgery Per Choosing Wisely Guidelines by Year

NCDB n = 138,648



Eliminating SLNB in HR+/HER2- Patients Age ≥ 70 Years

Qualitative Interviews

Role of Patients n = 12

Did not recall discussion to omit

Did not understand role of SLNB

MD recommendation primary driver

Wang T, Ann Surg Oncol 2021;28:902

Role of Providers n = 29 10 Surg Onc, 7 Rad Onc, 6 Med Onc

Lack of knowledge about data

Patients want it

Lack of multidisciplinary consensus on need

Age cutoff too young

Minami C, JAMA Netw Open 2022

Axillary Surgery After NAC in Node Positive Breast Cancer: EUBREAST Survey

Participants

349 MDs, 47 countries

79% surgeons, 21% radonc

56% university affiliated

67% ≥ 200 cases/yr at institution

Axillary Management After SLNBx

	ITCs	Micromets	Macromets
RT	33%	31%	32%
No treatment	32%	12%	0%
ALND	24%	35%	33%
ALND + RT	11%	23%	35%

The Problem

Integrating Less Therapy Across Disciplines

- Current treatment, both de-escalation and escalation, is supported by high-quality clinical trials
 - These trials required standard of care treatments outside of the trial question
 - By the time of publication, these treatments were often no longer standard

The effect of de-escalation of multiple therapies is unknown

Trials of No Axillary Surgery

	SOUND n = 1405	INSEMA n = 4858	BOOG 13-08 n = 1572
Age (years, median)	60	62	61.5
Tumor size (cm, median)	1.1	1.1	1.4
Clinical T2	Excluded	10%	17%
Ductal histology	78%	73%	78%
Grade 3	18%	< 4%	17%
HR+/HER2-	88%	95%	87%
Partial breast irradiation	11%	Not allowed	Not allowed

Key Outcomes in Studies of No Axillary Surgery

	SOUND n = 1405		INSEMA n = 4858		BOOG 13-08	
% macrometastases	9%		11%		8%	
% ≥ 4 positive nodes	0.6%		0.8%		0%	
	Nodal Recurrence					
	No SLN	SLN	No SLN	SLN	No SLN	SLN
	0.4%	0.4%	1%	0.4%	0.7%	0.4%

No survival differences

Not necessary for systemic therapy decisions

Gentilini O, JAMA Oncol 2023;9:1557
Reimer T, N Engl J Med 2024;392:1051
Smidt M, SABCS 2025;GS2 Abstract 11
Kalinsky K, N Engl J Med 2021;385:2336

Uncertainties Regarding Omitting Axillary Staging

Radiotherapy Decision Making

Undertreatment

No RNI

Macrometastases

- 9% SOUND
- 11% INSEMA
- 8% BOOG 13-08

Overtreatment

No PBI

- $\leq 10\%$ of patients in PBI RCTs had N1 disease

ASTRO PBI Guidelines

Age > 40

Node negative

T < 2 cm

Grade 1-2

HR+

No LVI

Negative margins

SOUND 84.6%
INSEMA 84.1%

Outcomes of Omission of SLNB Without RT

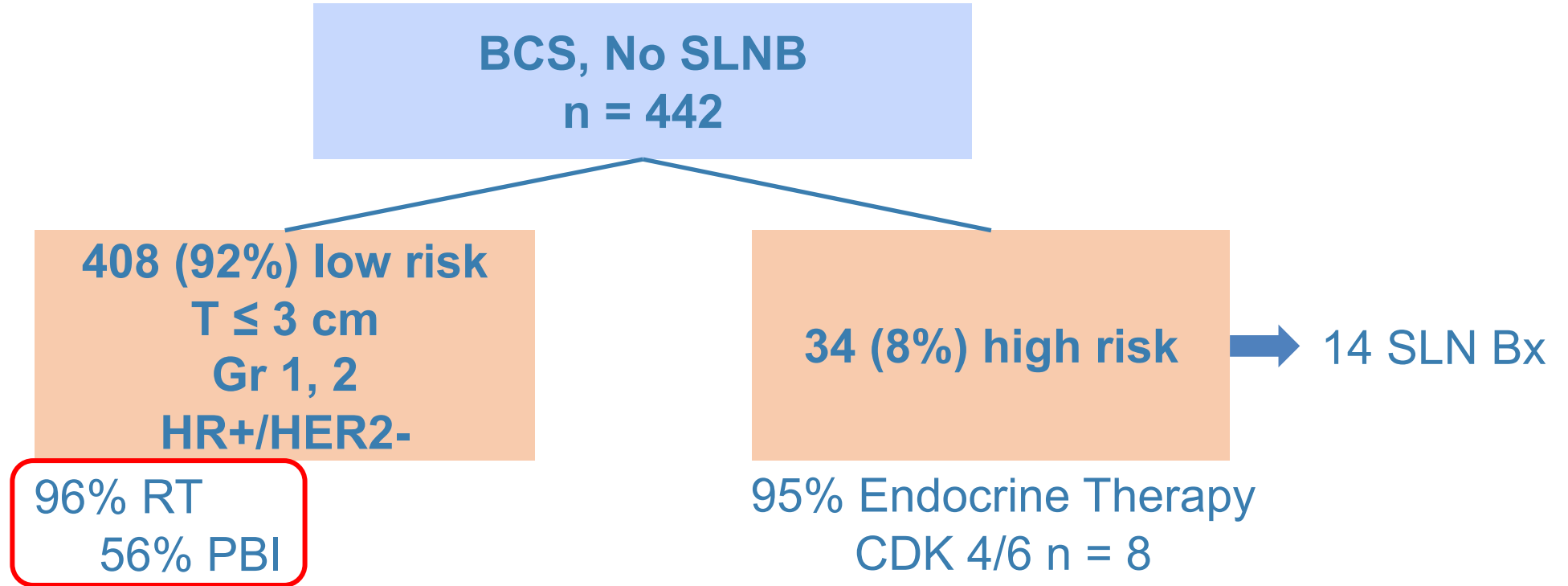
	n	Age	Eligibility	Median f/u (years)	Nodal recurrence
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Very low rates of nodal recurrence in spite of omission of RT

Current Strategy

- The benefits of PBI versus WBRT are well documented. Sequelae of SLNB are well documented
 - If the PBI issue really bothers you, talk to the patient about what is important to her
 - Come to multidisciplinary agreement on when you are comfortable with SLN omission and PBI

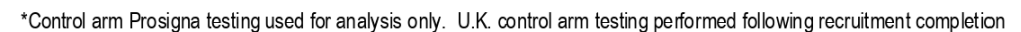
MSKCC Prospective Study of SLN Omission



Addressing the barrier to SLNBx Omission in Premenopausal women

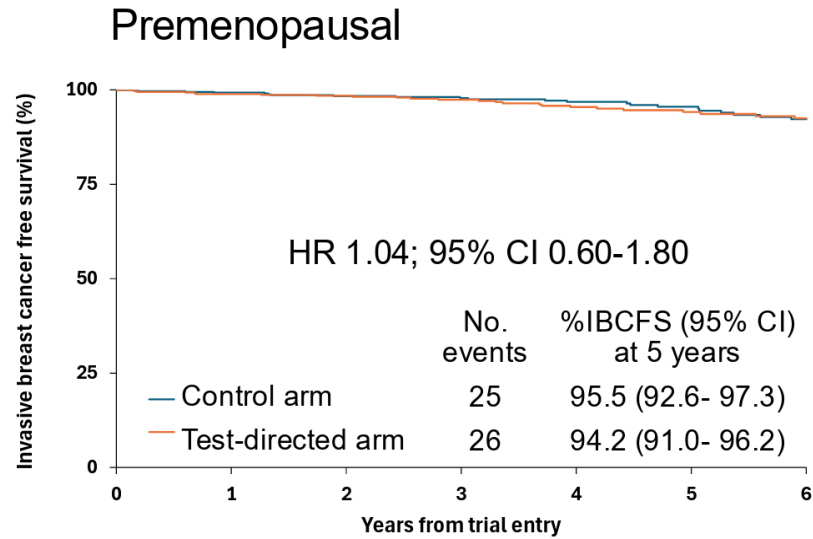
Main eligibility criteria

- Nodes: ▶0-9N+,
▶minimum T-size requirement if N0/ N1mi
- Neoadjuvant chemotherapy prohibited

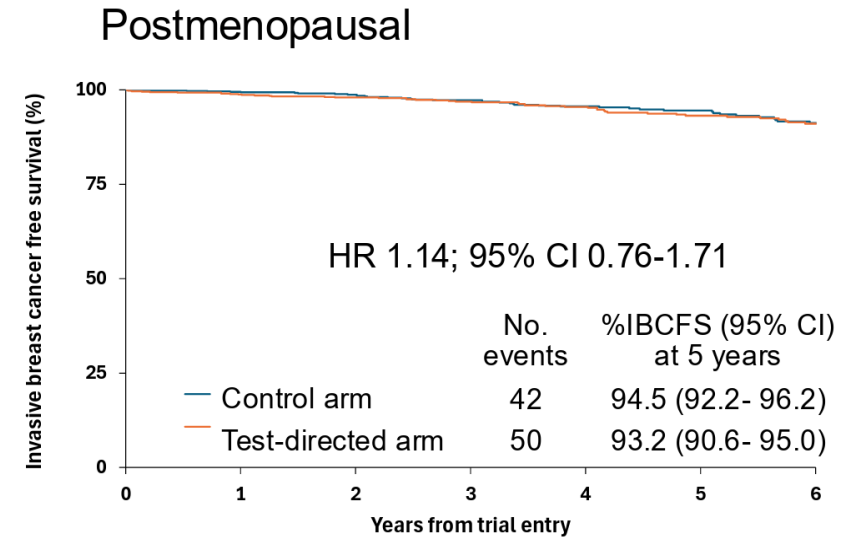


Results OPTIMA Trial

IBCFS versus menopausal status: low ROR score population



1.3% observed 5-year difference—favors chemotherapy



1.3% observed 5-year difference—favors chemotherapy

Conclusion: Patients with ER+/HER2- EBC and ROR score ≤ 60 tumors can safely avoid chemotherapy

Omission of RT Based on Biology

LUMINA

Eligible

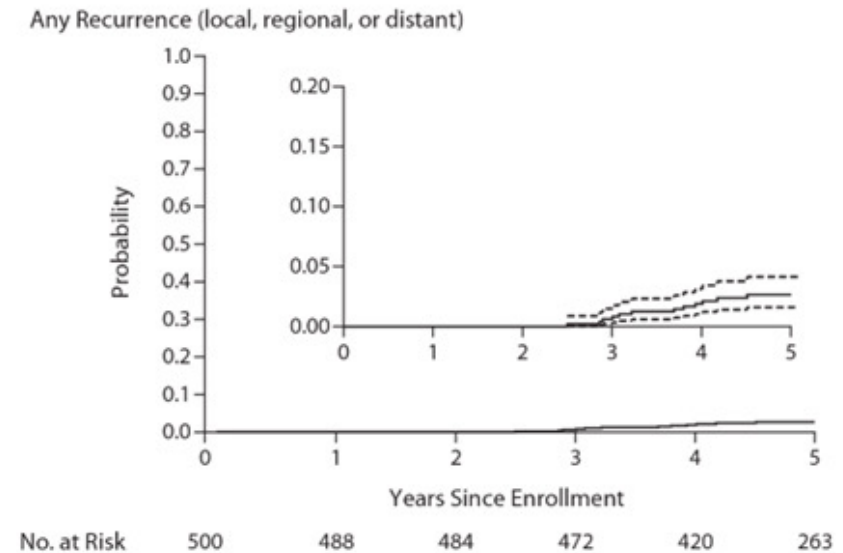
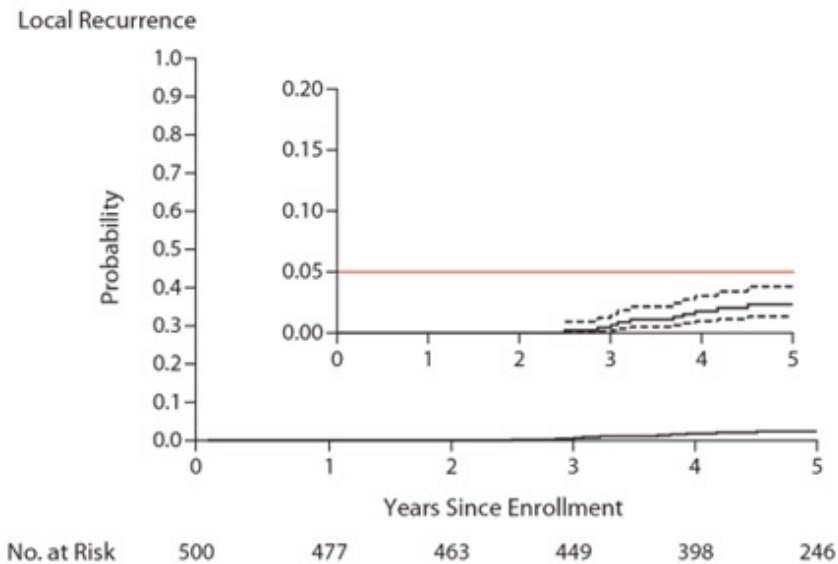
T1N0, age ≥ 55 years

Grade 1 or 2

ER $\geq 1\%$, PR $> 20\%$

HER2 negative

Ki 67 $\leq 13.25\%$



Omission of RT Based on Biology

Eligible

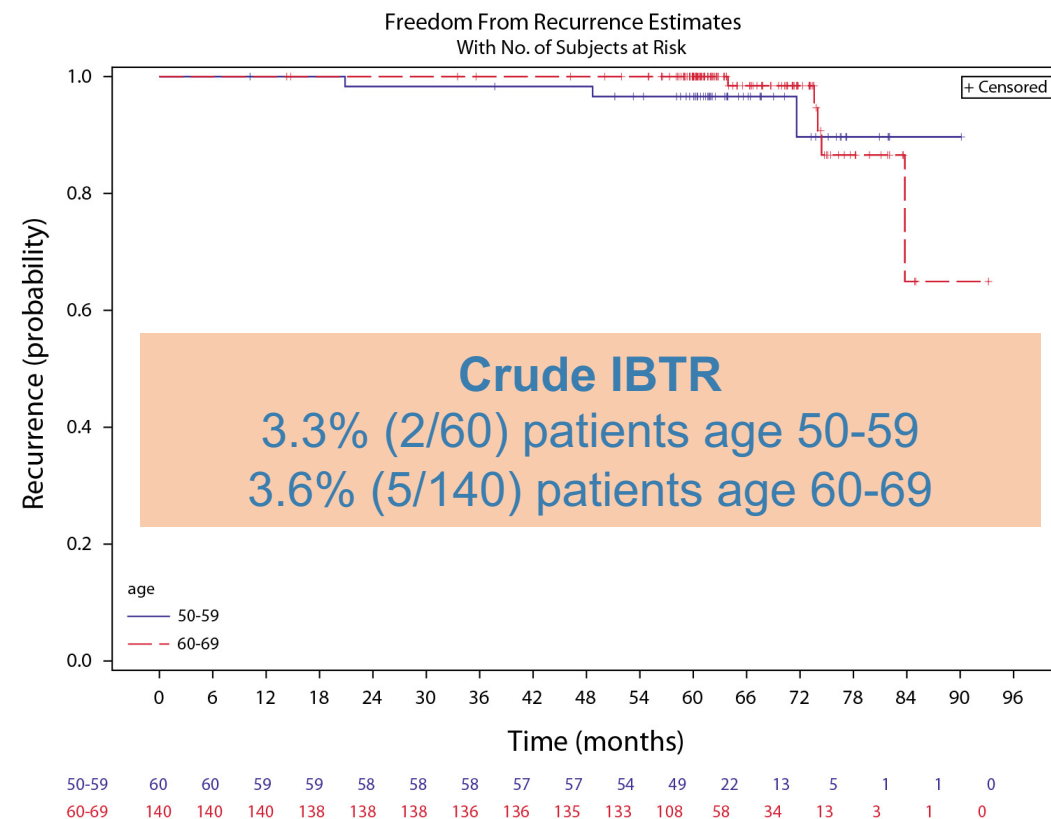
pT1N0, age 50-69 years

Postmenopausal

ER+, PR+, HER2-

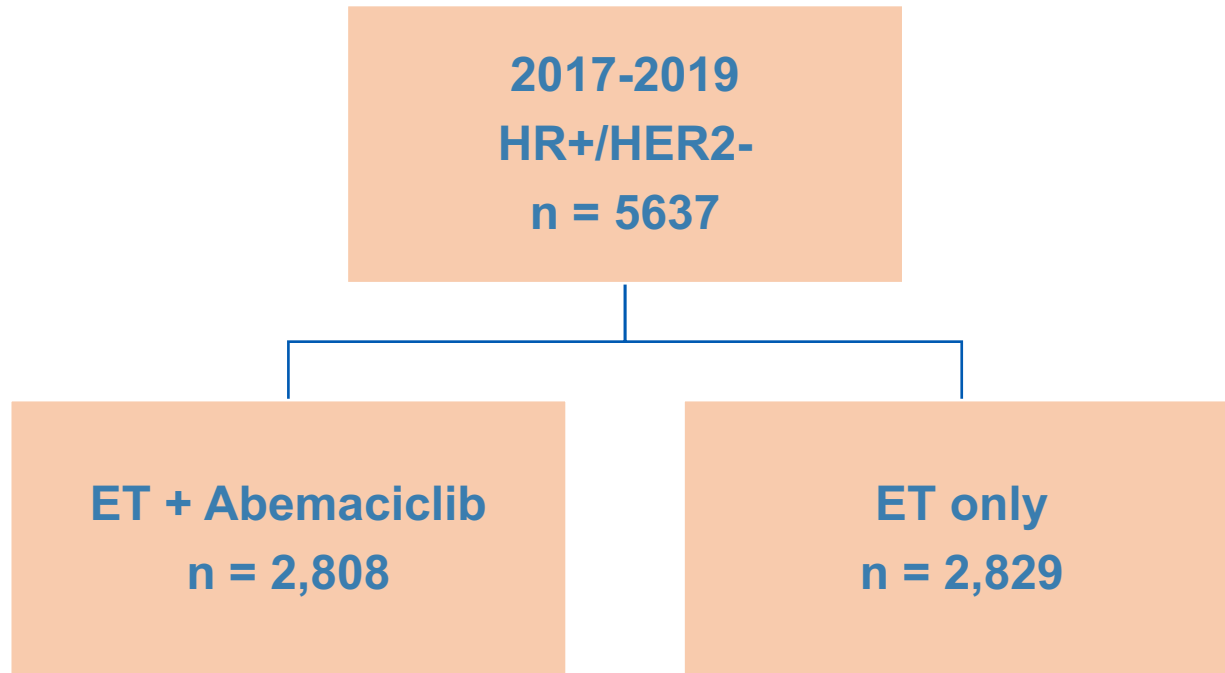
Margin ≥ 2 mm

Oncotype RS ≤ 18



**Should We Return to Bigger Surgery
to Provide Certainty About Adjuvant Systemic Therapy Choices?**

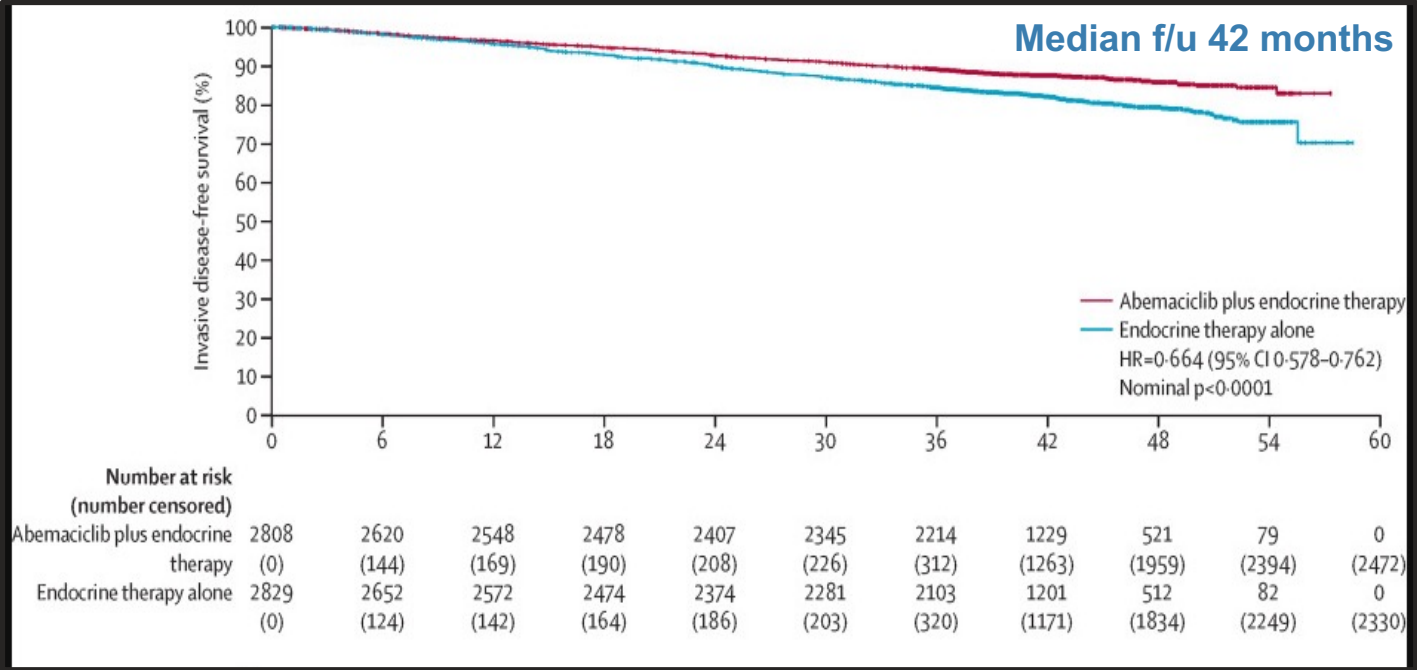
MonarchE: Abemaciclib + Endocrine Therapy for HR+/HER 2-, Node Positive, High Risk Breast Cancer



Cohort 1: ≥ 4 positive or 1-3 positive LNs and either G3, $T \geq 5$ cm

Cohort 2: 1-3 positive axillary LNs and Ki-67 $\geq 20\%$ and G1-2 and T1-2

Addition of Abemaciclib Decreases Risk of IDFS Events



Est. 4-year IDFS 85.8% vs 79.4%

	ET + Abemaciclib	ET only	HR (95% CI)
IDFS events	12%	17.6%	0.66 (0.58-0.76)
Distant relapse-free survival events	10%	14.9%	0.65 (0.57-0.77)

What Is the Likelihood That Patients With 1-3 Positive SLNs Will Have ≥ 4 Positive Nodes on ALND?

Study	# Cases	≥ 4 Total Nodes
ACOSOG Z0011 1-2 positive SLNs	339	14%
MSKCC 1-3 positive SLNs	1314	16%
NCDB 1-2 positive SLNs	1578	13%
NCDB 1-3 positive SLNs	1762	17%
Institut Curie	721	12%

NCDB	1 positive SLN: 9.6%	4 positive nodes ALND
	2 positive SLNs: 24.3%	4 positive nodes ALND
	3 positive SLNs: 50.5%	4 positive nodes ALND

Giuliano A, JAMA 2011;305:569
McCartan D, Ann Surg Oncol 2016;25:3324
Williams A, Cancer 2024;130:1052
Gaillard T. Br J Cancer 2024;130:1141

ALND to Identify pN2-3 Disease as an Indication for CDK 4/6 Inhibitors

Subset analysis of SENOMAC

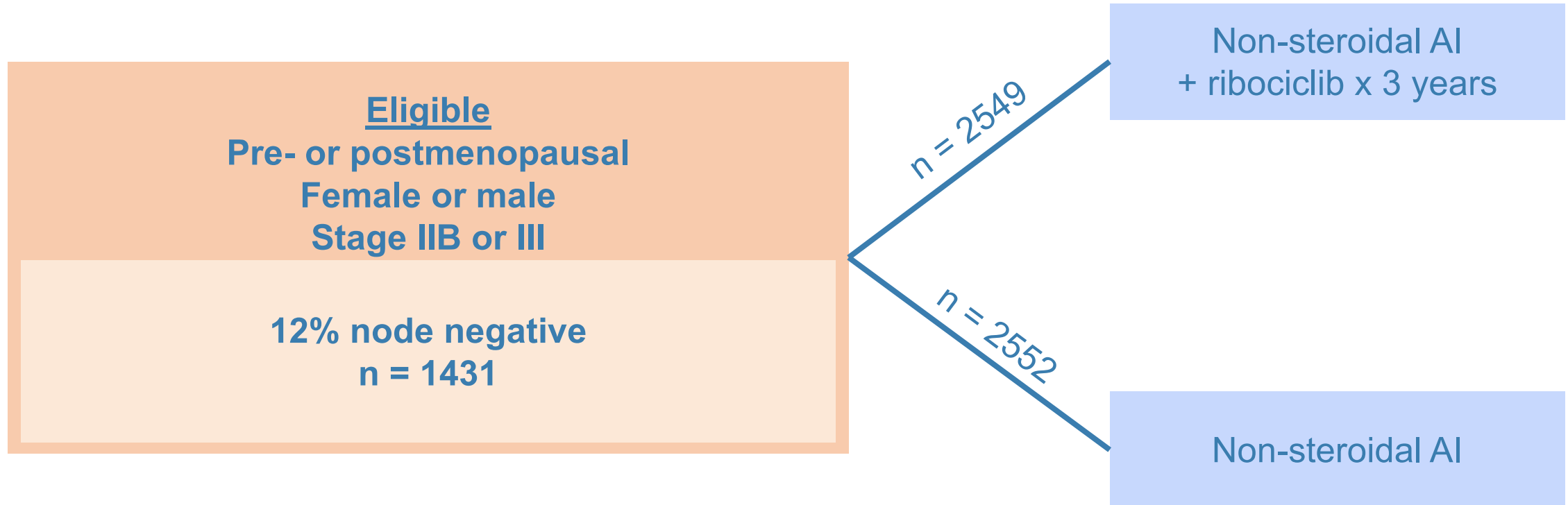
Population: T1-2, Gr 1-2
T < 5 cm
Median f/u 45.2 months

	SLN Only	ALND
	n = 903	n = 802
≥ 4+ Nodes	1% (n = 5)	13% (n = 101)
Severe/very severe impairment of arm function	4%	13%

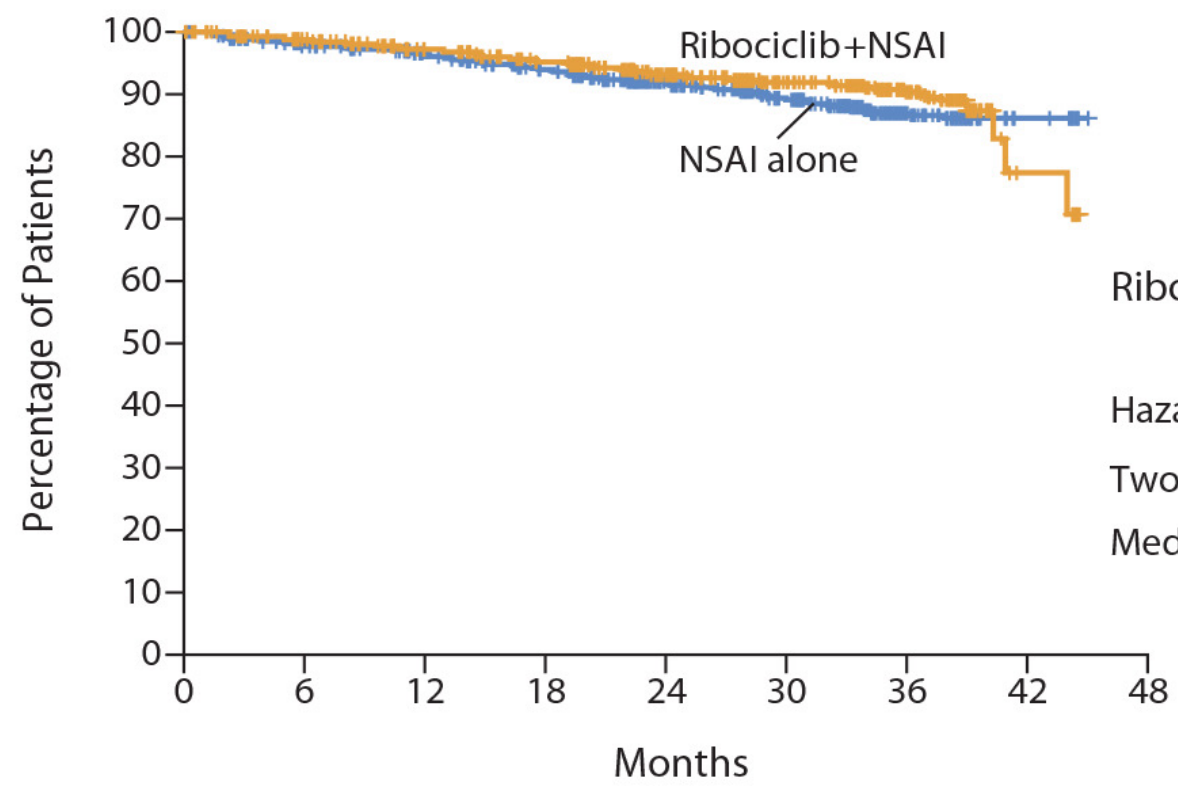
104 cALND to avoid 1 DFS event at 5 years
at a cost of 9 patients with severe/very severe arm impairment
and 13 with clinical lymphedema

Expanding the Indications for CDK4/6 Inhibitors

The NATALEE Trial



Invasive Disease-Free Survival



HR IDFS	
All Pts 0.75 (0.62-0.91) p = .003	N0 Pts 0.72 (0.41-1.2) p = NS

Ribociclib in Node Negative Patients

- NNT to prevent 1 distant recurrence: 37
- Estimated cost: \$400,000 for 3 years
- 36% discontinued before 3 years
- Cost to prevent 1 distant disease-free recurrence: \$14.8 million

**SLNB may be considered in patients in good health
with higher-risk features (Gr 3, LVI)**

Morbidity of SLNB

	ACOSOG Z10	ALMANAC	Lorek et al.
# Patients	4069	629	600
Interval	6 months	18 months	26 months
Paresthesia	8.6%	8.7%	14%
Decreased ROM	3.8%	-	3.5%
Lymphedema	6.9%	7%	4%

Omitting Surgery After NAC in Exceptional Responders

The ultimate uncertainty

Eliminating Breast Surgery in Exceptional Responders to NAC

Eligible	Intervention	Outcomes
Age $\geq$ 40 years HER2+ or TN N0, N1 $\rightarrow$ N0 ($\leq$ 4 abnl nodes on US) Post NAC imaging abnormality $\leq$ 2 cm	9G VAB, minimum 12 cores Cavity clipped post bx TAD for N+ patients	IBTR 5 years
	Follow up	Secondary
	Mammogram q6 mo x 5 years	Residual disease on core # Follow up biopsies

Eliminating Breast Surgery in Exceptional Responders to NAC

50 Eligible Patients



Median follow-up 26.4 months (IQR 15.2-39.6)

IBTR	Any Recurrence	Ipsilateral Breast Biopsy
0	0	9 (29%)

How Accurately Does Image-Guided Biopsy Identify Residual Tumor?

Prospective Studies

German Multicenter Study

n = 398
Mammogram + Ultrasound
US 7-8G VAB
FNR 17.8% (95% CI 12.8-23.7%)
Normal mammo, US 6.2% (3.4-10.5%)

Heil J, Ann Surg 2022;275:576

Dutch MICRA Trial

n = 167
Mammogram, Ultrasound, MRI
US 14G Core
FNR 37%

van Loevezijn A, Ann Surg Oncol 2021;28:3243

NRG-BR005

n = 101
Mammogram, Ultrasound, MRI
8-11G VAB
FNR 22.5%

Basik M, JAMA Surg 2025;160:723

Does Post-NAC Imaging Accurately Identify Nodal Metastases?

SN FNAC Trial

Modality	False Negative Rate	Accuracy
Clinical Exam	82%	45%
Axillary US	47%	62%
SLN Biopsy	8%	95%

Is Breast pCR an Appropriate Surrogate for Nodal pCR?

cN0, breast pCR		
	<u>MD Anderson</u>	<u>NCDB*</u>
# cases	116	5377
ypN+ (%)	0%	1.6%

cN0, no breast pCR		
	<u>MD Anderson</u>	<u>NCDB*</u>
# cases	164	9482
ypN+ (%)	6%	27%

cN+, breast pCR		
<u>Korea</u>	<u>MD Anderson</u>	<u>NCDB*</u>
27	77	5094
15%	10%	7.8%

***TN and HER2+ only**

How Much Uncertainty Is Acceptable?

- Failure to accurately identify residual disease
 - Deprives patients of alternative anti-HER2 therapies or capecitabine
 - May lead to inappropriate omission of PMRT
- Is undertreating 18-30% of patients to avoid a 1-hour outpatient surgery a good tradeoff?

The Future

- As we continue to identify more biologic and prognostic subsets of breast cancer, we must become more comfortable with uncertainty
- We will never have clinical trials that address every subset of every subgroup

The Example of the 2026 ASCO Sentinel Node Biopsy Guideline

SLNB can be omitted for select patients with ≤ 2 cm breast cancer, a negative axillary ultrasound, and who fulfill *all* of the following criteria and for whom the detection of nodal metastases would not change treatment:

Postmenopausal and ≥ 50 years

Unifocal invasive ductal cancer ≤ 2 cm in size

Grade 1-2

HR+/HER2- planned for adjuvant endocrine therapy

No suspicious nodes on axillary ultrasound or 1 suspicious node with benign biopsy

Upfront BCS with WBRT (if ≤ 65 years)

Evidence Quality: Moderate

Strength of Recommendation: Strong

2025 ASCO Sentinel Lymph Node Biopsy Guideline

“Recommendations are based on the populations that were well represented in the SOUND and INSEMA trials”

	SOUND	INSEMA	BOOG 13-08
Lobular (mixed or pure)	8.5%	12.7%	14%
Grade 3	18%	< 4%	17%
Multifocal/centric	Excluded	3% multifocal	?
LVI	?	?	?

What About “Underrepresented” Patients?

Key Question:

Are nodal metastases more frequent or do they change therapy?

Lobular Cancer

n = 639 (28% premenopausal)

cT1N0, HR+/HER2-

87% low or intermediate grade

Normal axillary ultrasound

	ILC n = 639	SOUND n = 701	INSEMA n = 3896
Any pN+	17.6%	13.7%	15.1%
pN1	11.6%	8.0%	11.4%
pN2-3	2.3%	0.6%	0.2%

Impact of Therapeutic Trade-Offs on Patients: The Other Missing Piece

Patient-Centered Care

“Care that is respectful of and responsive to individual patient preferences, needs, and values”

Crossing the Quality Chasm: A New Health System for the 21st Century
Institute of Medicine/National Academies Press 2001

An intervention should be considered a “standard” only if there is “virtual unanimity among patients about the overall desirability... of the outcomes”

Eddy D, JAMA 1990;263:3077

Practicing Patient-Centered Care

Easy

BCT vs Mastectomy

- Multiple randomized trials, meta-analyses
- Direct comparison of cancer outcomes
- Large body of evidence from PROMS on other outcomes
- Differences clear to patients

Practicing Patient-Centered Care

Difficult

Axillary Management After Mastectomy and Reconstruction in Patients with Involvement of 1-2 SLNs when PMRT Is Not Clearly Indicated

- Oncologic safety of either approach demonstrated in clinical trials
- Significant possibility if ALND chosen that PMRT will be added postop
- Trials document lower risk of lymphedema with nodal RT, but do not address effect of RT on reconstruction
- Both lymphedema and reconstructive complications range from mild to severe, and methodology for assessing complications and frequency is variable
- Patients who lose implant reconstructions are not all medically suited for flap reconstructions
- Long-term outcomes of surgical strategies to reduce lymphedema are unknown

What's the Answer? The Future Is Now

- Knowledge gaps ideally would be addressed at the local level by the MDT to define what are acceptable approaches and in what combinations
- National organizations (SSO, ASTRO, ASCO) could facilitate this by developing practical, acceptable care frameworks in addition to rigid evidence-based guidelines which generally can't address areas of clinical uncertainty

What's the Answer?

- Training programs need to include education on how to deal with uncertainty—it's only going to get worse!
- Clinical trial questions have become more focused, but patient-reported outcomes need to become more broad to encompass much more of the total patient experience rather than a specific side effect. This carries relatively little cost
- We need to become more nimble at incorporating new standards of care into ongoing trials, even if the trials may not be as statistically pure

What's the Answer?

- We need to effectively work together, leaving behind our biases for our own disciplines, whether rooted in pride, RVUs, or income, to develop treatment paradigms that maximize survival, minimize the burden of treatment for patients, and incorporate patient preference into the decision-making process