



# 2025

## DEBATES AND DIDACTICS in Hematology and Oncology



Where Science Becomes Hope

**JULY 24 - 27, 2025 • SEA ISLAND, GEORGIA**

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# **Triple Negative Breast Cancer Where We Are and Where Are We Going**



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Associate Professor  
Winship Cancer Institute of Emory University**

# Disclosures

- Consultant/Advisor/Speaker: AstraZeneca

# What we will learn today

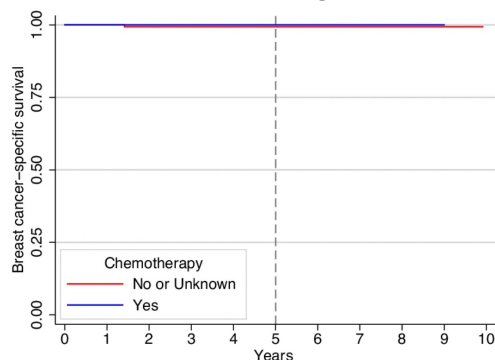
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- Contemporary management of TNBC
- Evolving role of antibody drug conjugates
- Emerging biomarkers for treatment selection
- Ongoing clinical trials

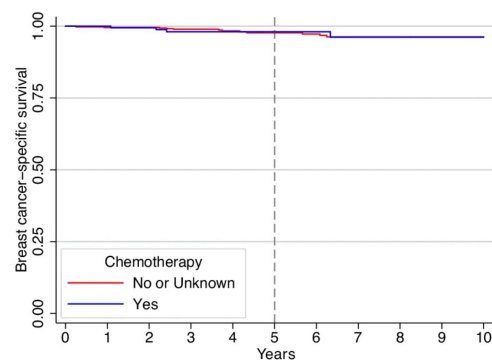


# How to treat stage I TNBC

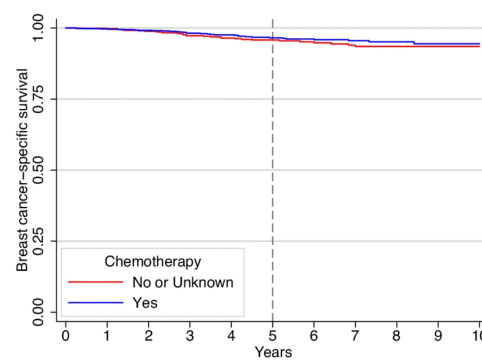
Tmic



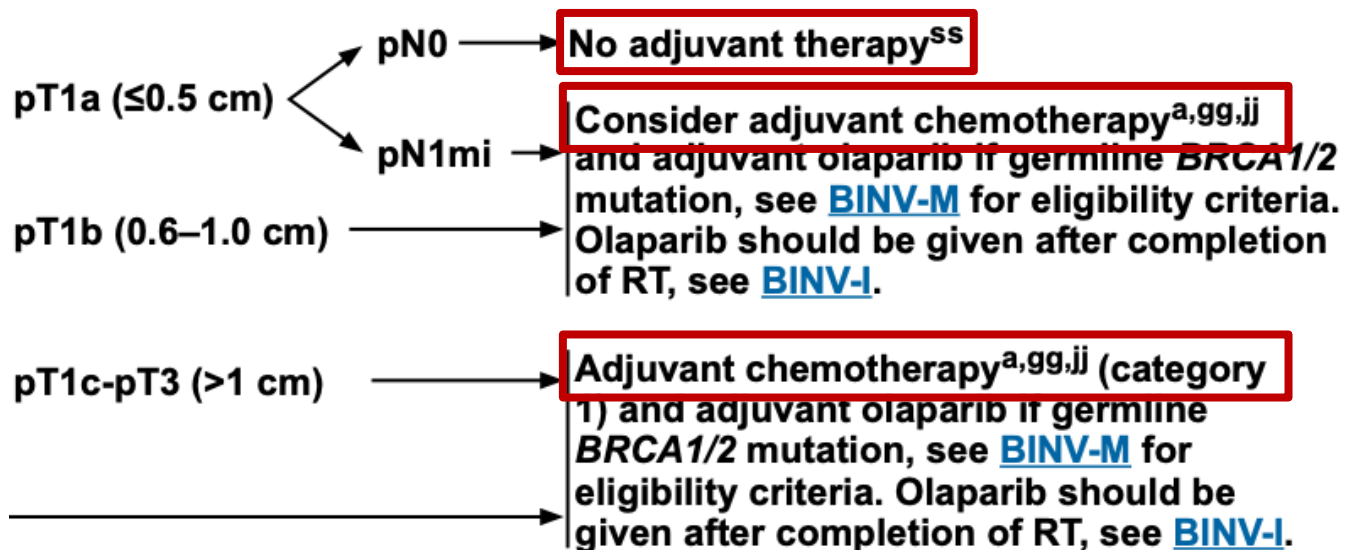
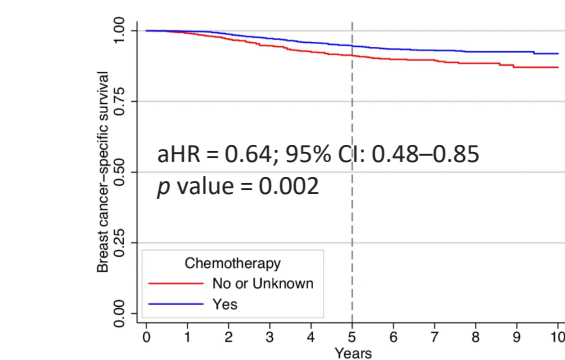
T1a



T1b



T1c



# Patient Case

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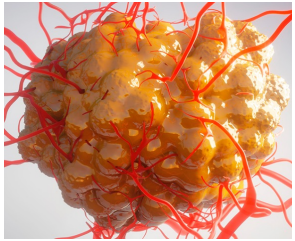
3 cm TNBC  
with 2 LN+




CT and  
bone scan  
negative

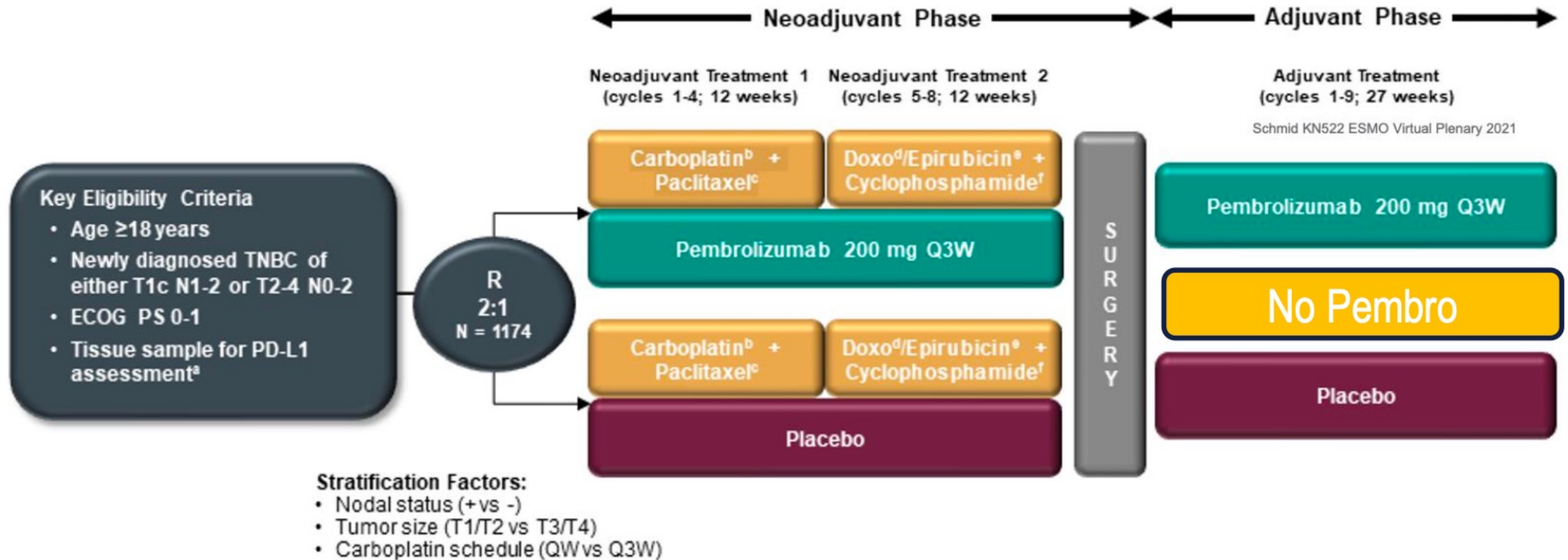
# How to treat stage II-III TNBC

## KEYNOTE 522



Neoadjuvant	Surgery	Adjuvant
Carboplatin-paclitaxel followed by doxorubicin-cyclophosphamide with pembrolizumab		<b>Pembrolizumab (pCR)</b>
		<b>Pembrolizumab + capecitabine/Olaparib (RD)</b>

# KEYNOTE 522



**Neoadjuvant phase:** starts from the first neoadjuvant treatment and ends after definitive surgery (post treatment included)

**Adjuvant phase:** starts from the first adjuvant treatment and includes radiation therapy as indicated (post treatment included)

<sup>a</sup>Must consist of at least 2 separate tumor cores from the primary tumor.

<sup>b</sup>Carboplatin dose was AUC 5 Q3W or AUC 1.5 QW.

<sup>c</sup>Paclitaxel dose was 80 mg/m<sup>2</sup> QW.

<sup>d</sup>Doxorubicin dose was 60 mg/m<sup>2</sup> Q3W.

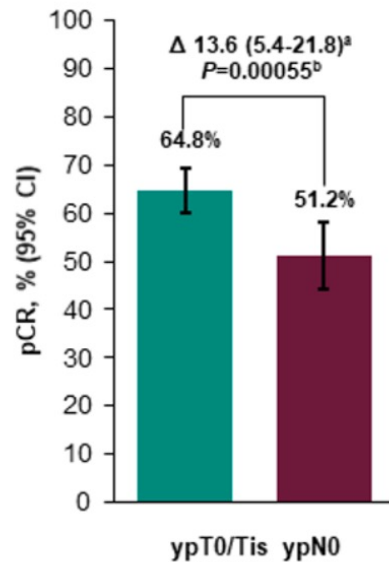
<sup>e</sup>Epirubicin dose was 90 mg/m<sup>2</sup> Q3W.

<sup>f</sup>Cyclophosphamide dose was 600 mg/m<sup>2</sup> Q3W.

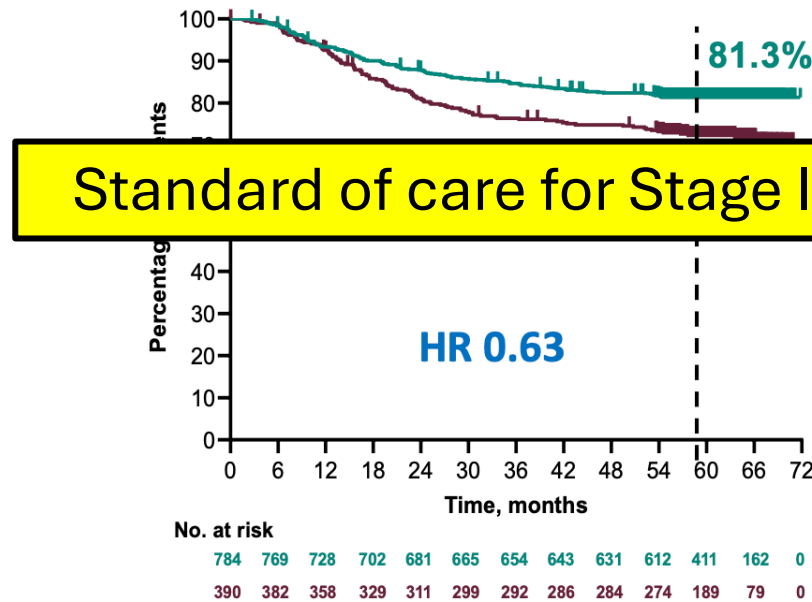
# KEYNOTE 522

## Pathological complete response

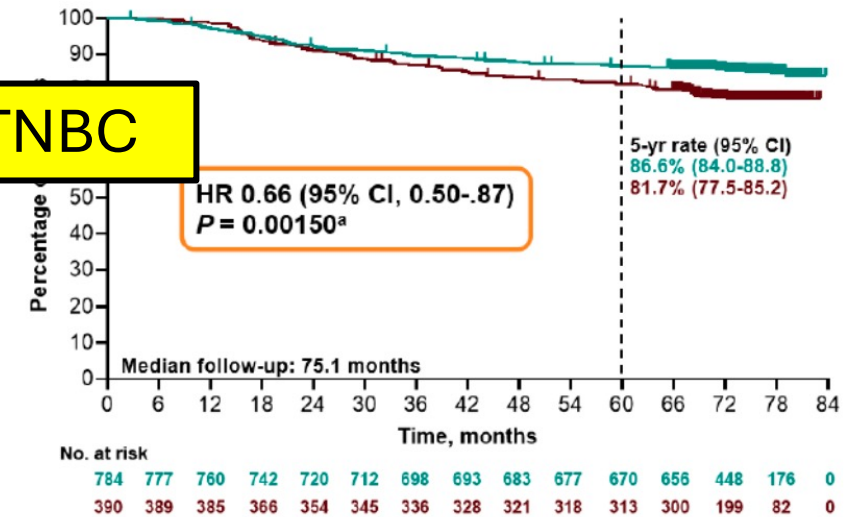
Pembro + Chemo (N = 401)  
Pbo + Chemo (N = 201)



## 5-year Event Free Survival



## Overall Survival



# Patient case

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3 cm TNBC  
with 2 LN+

CT and  
bone scan  
negative

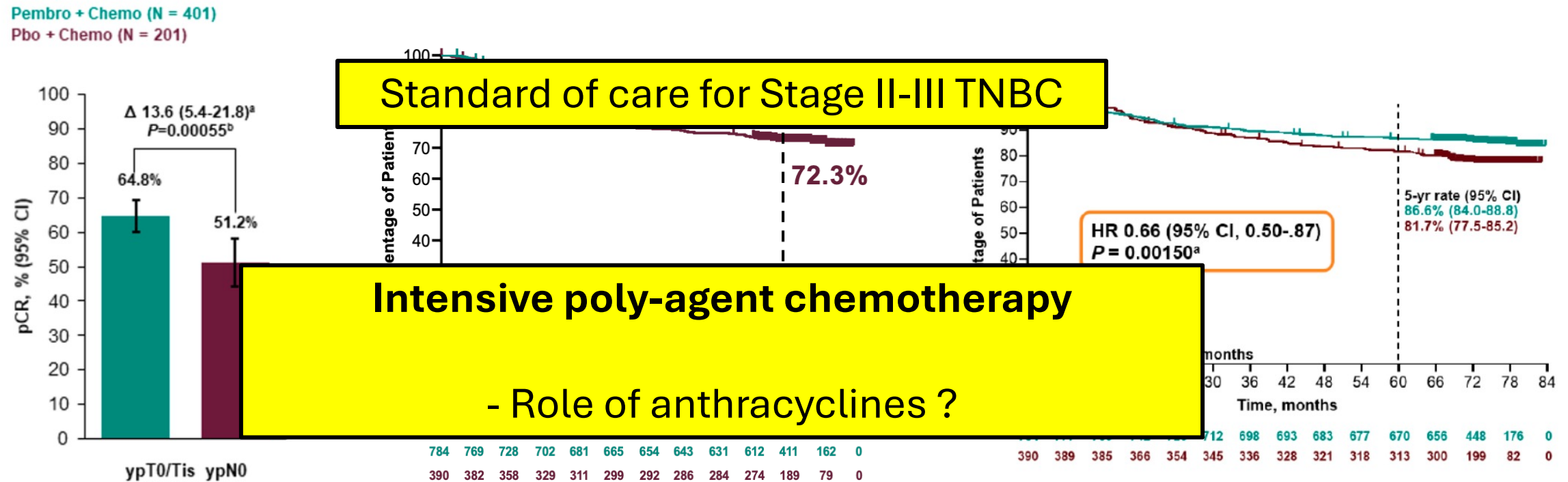
Carboplatin-paclitaxel and  
doxorubicin-cyclophosphamide  
with pembrolizumab

# KEYNOTE 522

Pathological  
complete response

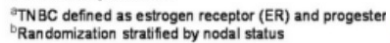
5-year Event Free  
Survival

Overall Survival

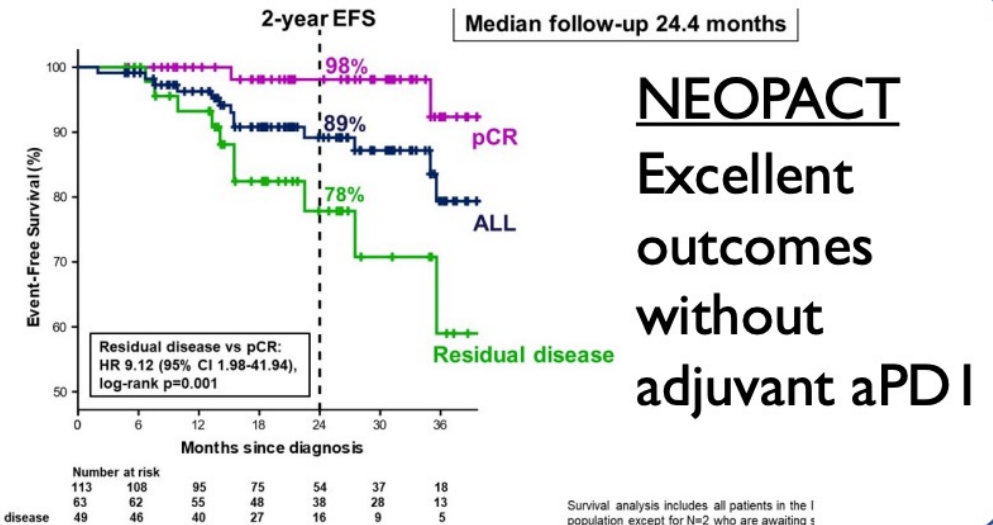




NeoSTOP: Docetaxel + carboplatin shows similar rate of pCR to Paclitaxel + Carboplatin -> AC



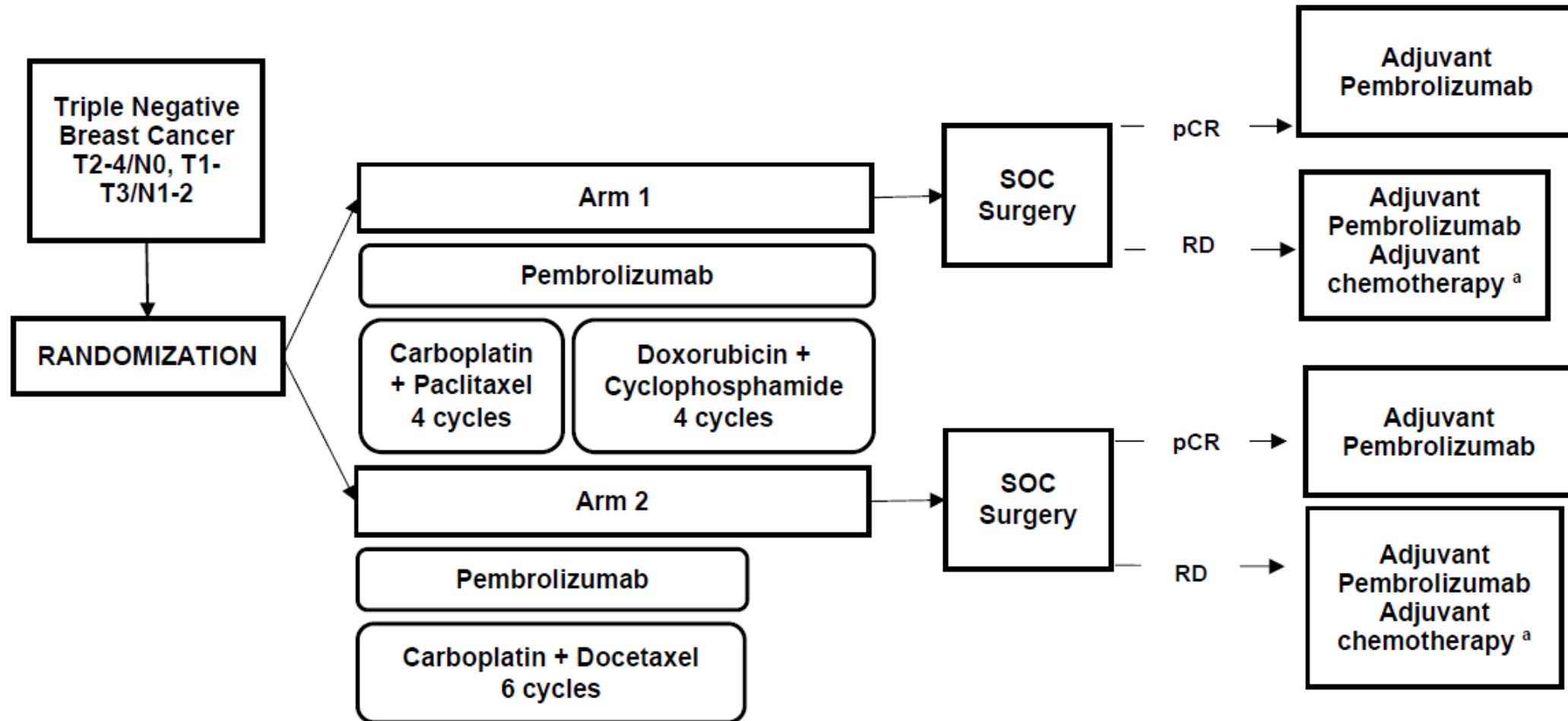
- pCR 58%





# SCARLET: Non-inferiority of taxane and platinum-based chemotherapy

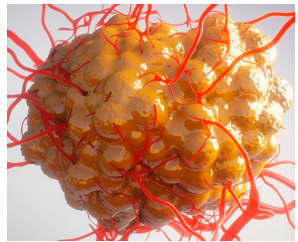
## De-escalation of the chemotherapy backbone




# How to treat stage II-III TNBC

What is the contribution  
of adjuvant  
pembrolizumab in pCR?

KEYNOTE 522

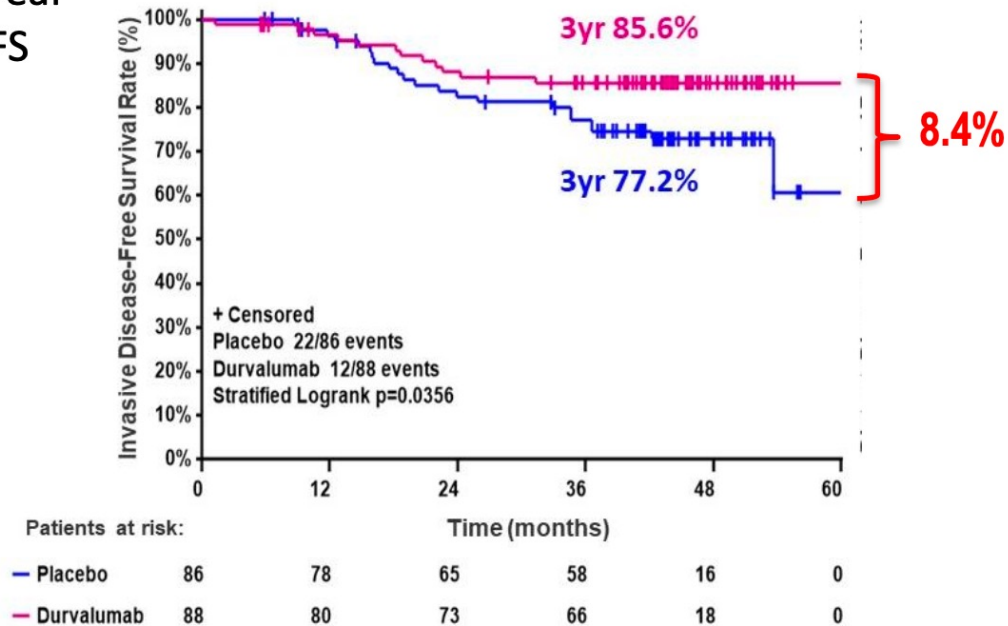


Neoadjuvant	Surgery	Adjuvant
Carboplatin-paclitaxel followed by doxorubicin-cyclophosphamide with pembrolizumab		<b>Pembrolizumab (pCR)</b>
		<b>Pembrolizumab + capecitabine/Olaparib (RD)</b>

# Contribution of adjuvant immunotherapy ?

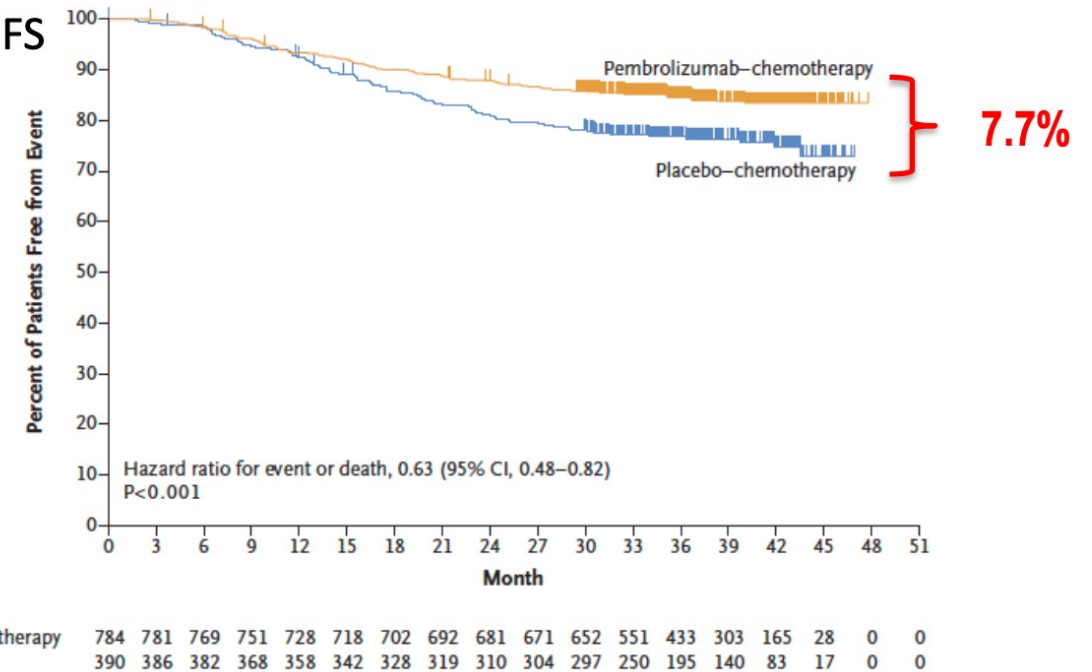
**GeparNuevo**  
Only preop IO, No adjuvant IO

3-year  
IDFS



**KN522**  
Preop and adjuvant IO

4-year EFS

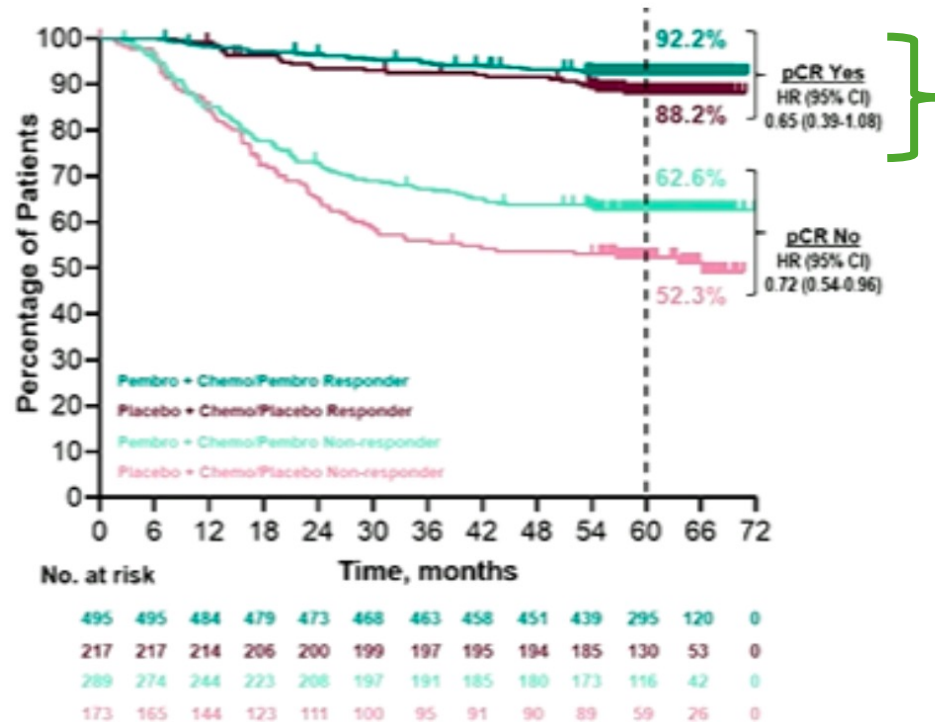


**Trials omitting adjuvant immunotherapy showed improved long-term outcomes**

# KN522 – Survival by pCR

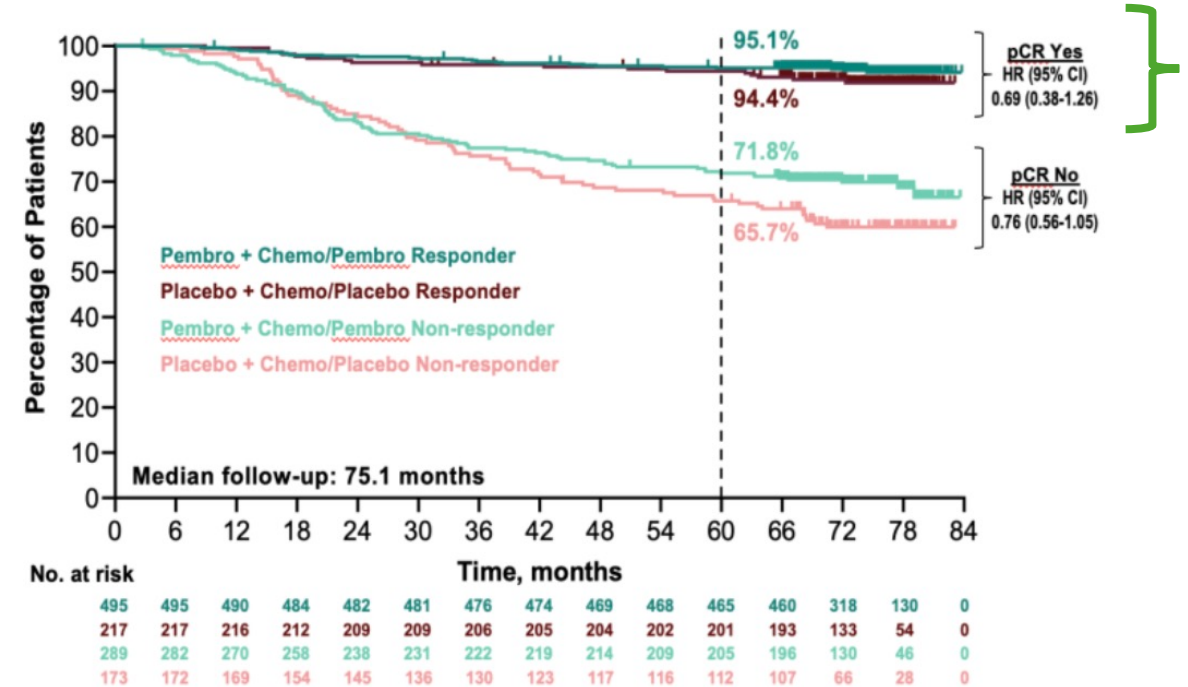
EFS

De-escalation



OS

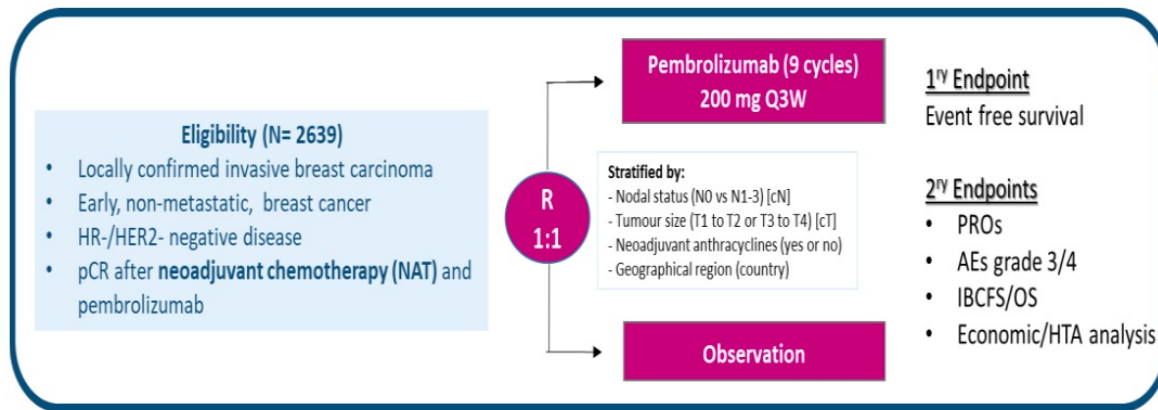
De-escalation



Patients with pCR

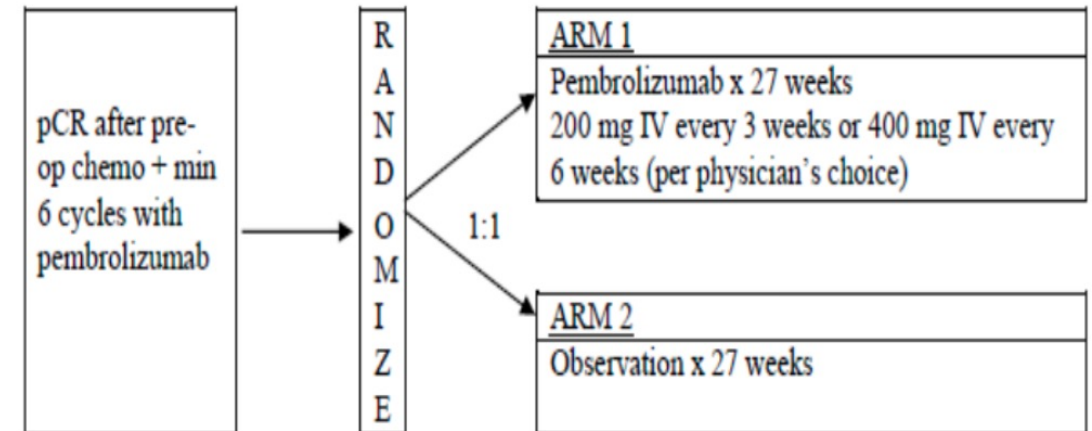
# De-escalation of adjuvant pembrolizumab

## OPT-PEMBRO



PI: Joana Ribeiro, IGR/unicancer, France

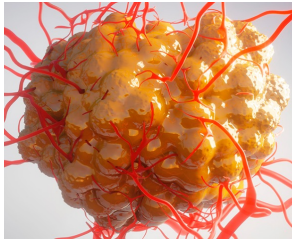
## OPTIMICE-pCR




PI: Sara Tolaney, DFCI/ALLIANCE, USA

# How to treat stage II-III TNBC

## KEYNOTE 522

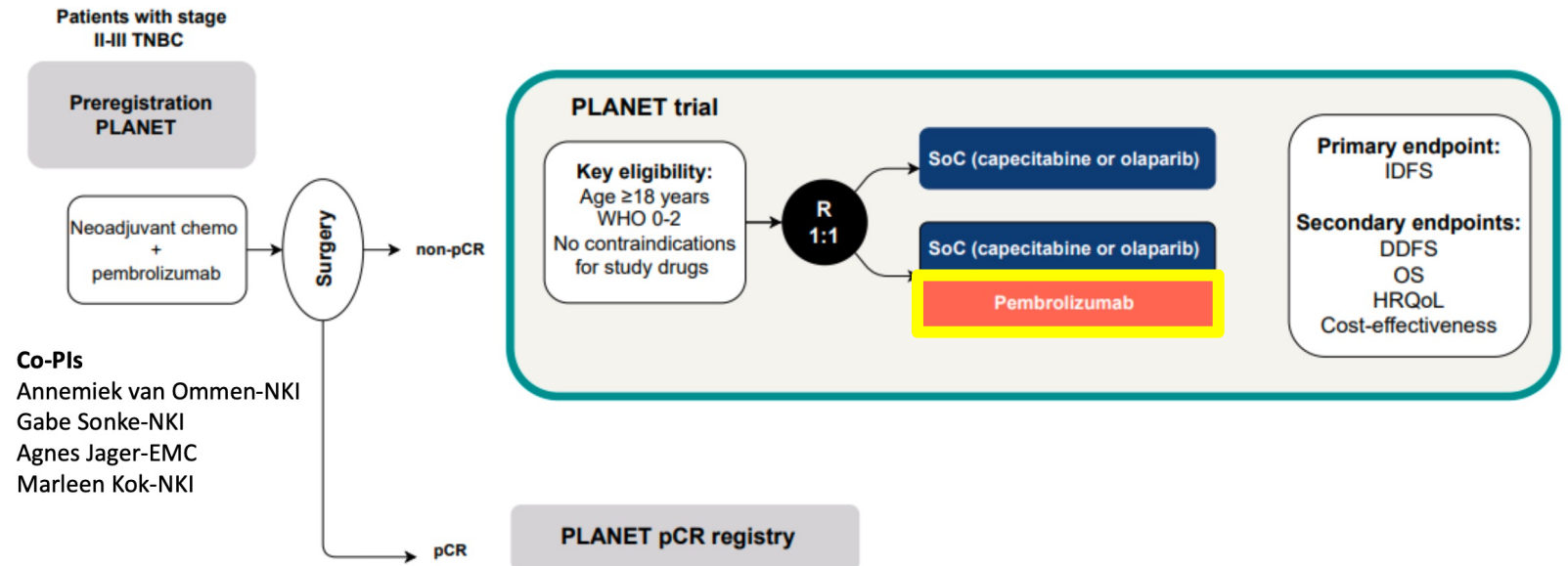


Neoadjuvant	Surgery	Adjuvant
Carboplatin-paclitaxel followed by doxorubicin-cyclophosphamide with pembrolizumab		<b>Pembrolizumab (pCR)</b>
		<b>Pembrolizumab + capecitabine/Olaparib (RD)</b>

What is the role of adjuvant pembrolizumab or capecitabine in non-pCR?

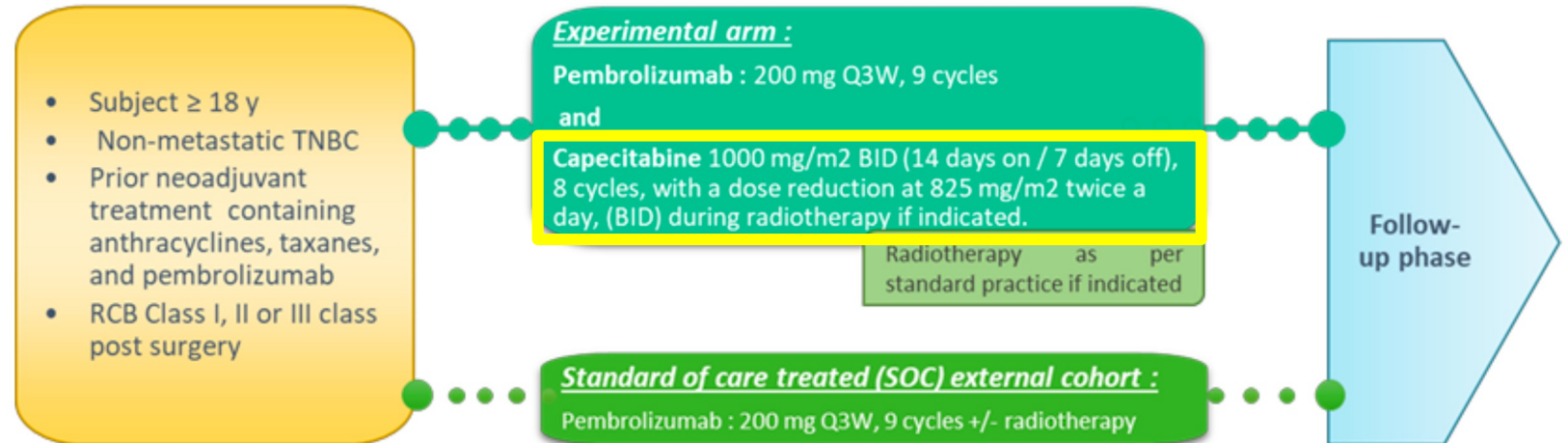
## PLANET trial

What is the additional role of pembrolizumab ?



## CAPPA trial

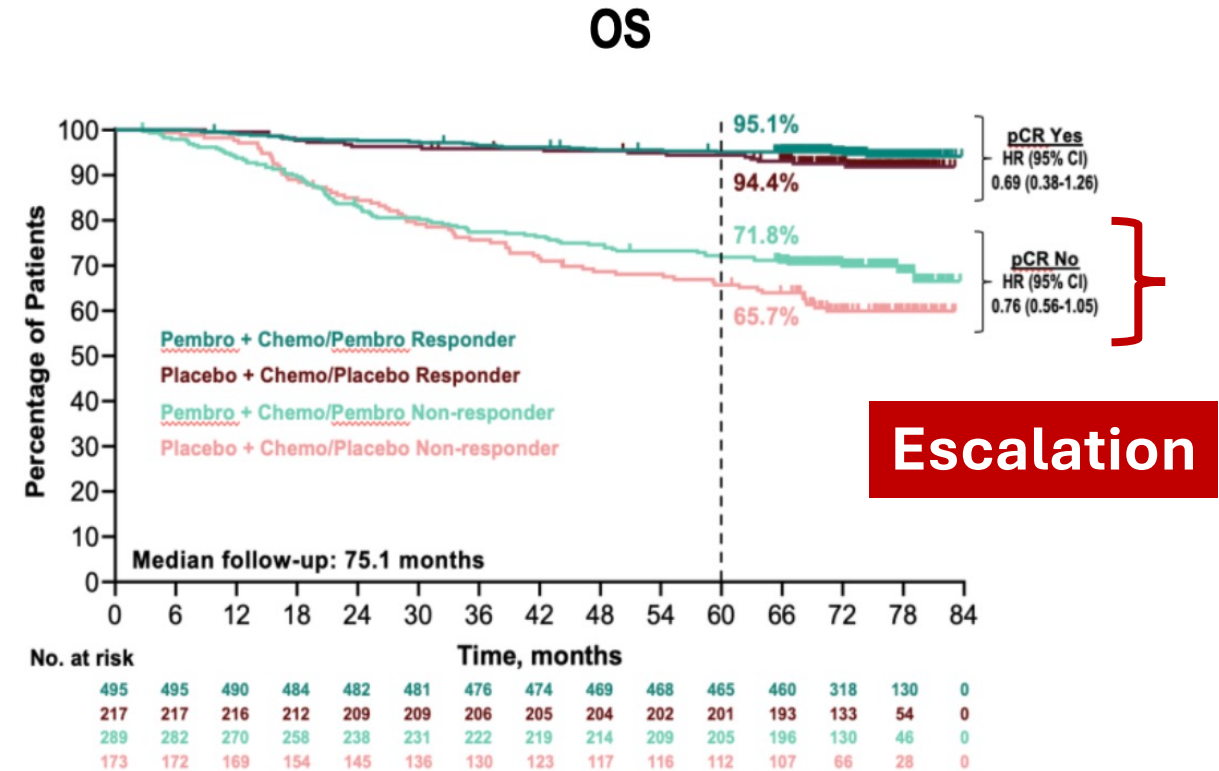
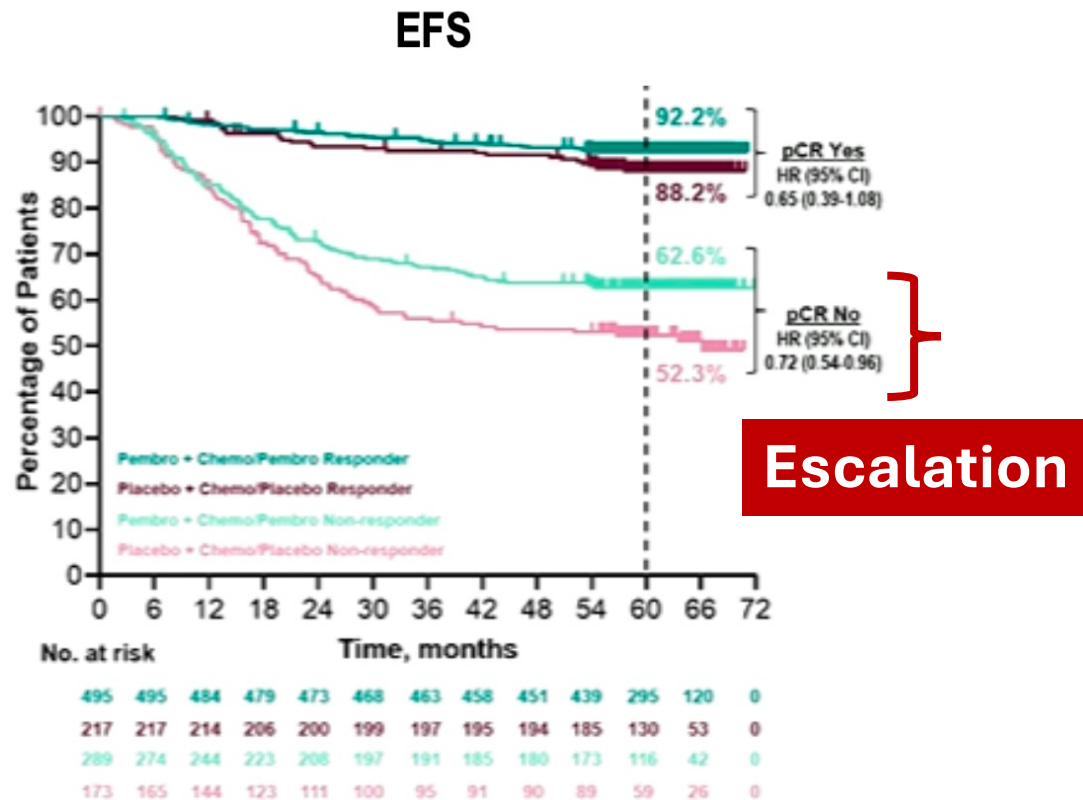
What is the additional role of capecitabine ?



PI: Delphine Loirat, ICurie/Unicancer, France



# KN522– Survival by Residual Disease

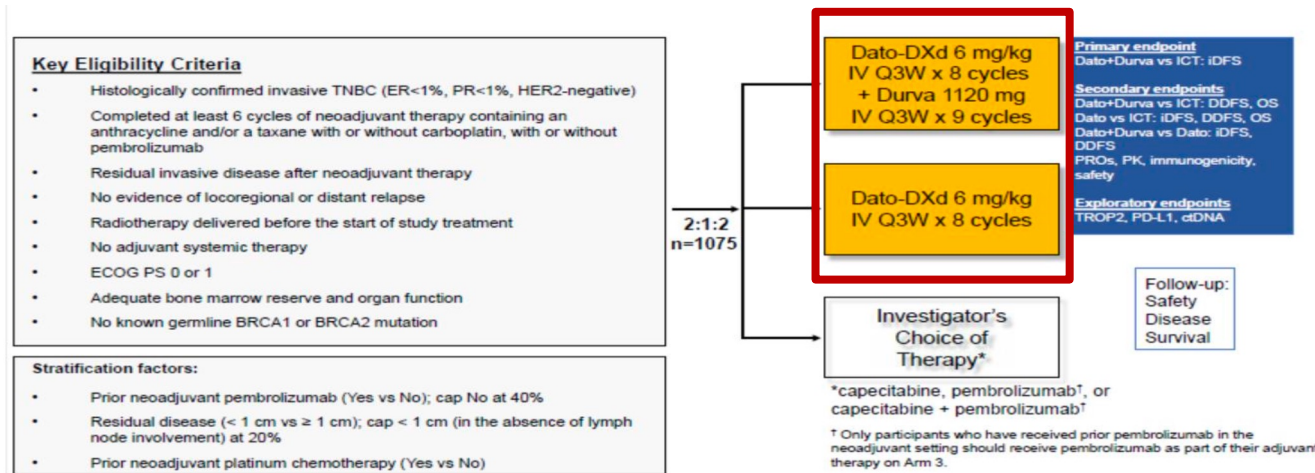


**Patients with residual disease**

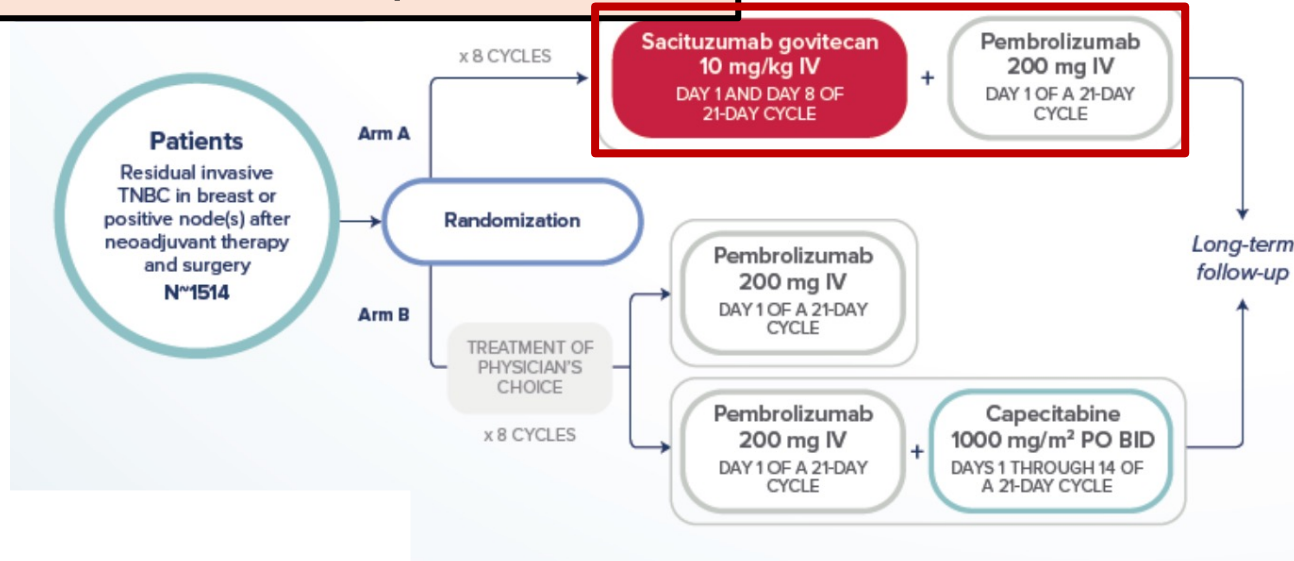


# Escalation of adjuvant treatment for residual disease

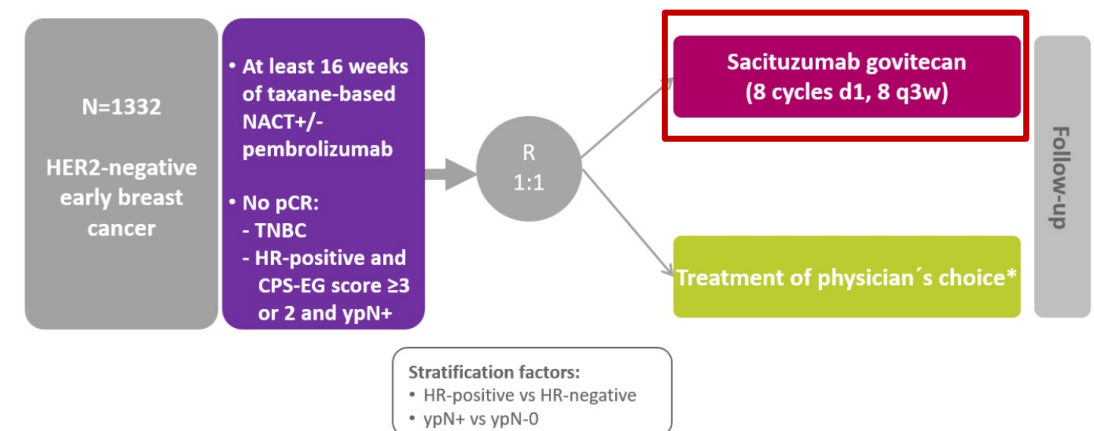
## TROPION-Breast03



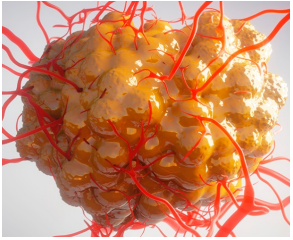
## ASCENT 05/OptimICE-RD



## SASCIA



# How to treat stage II-III TNBC



Chemotherapy + Atezolizumab

IMPASSION 030



Chemotherapy + Avelumab

A-BRAVE

Neoadjuvant  
chemotherapy

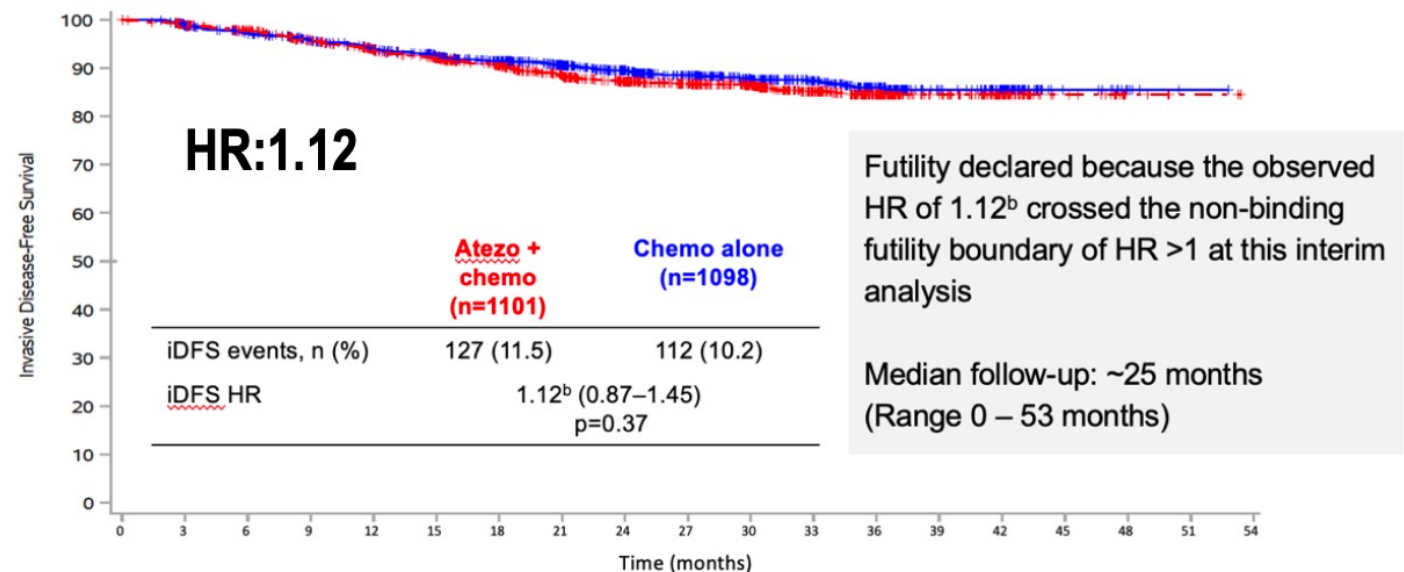
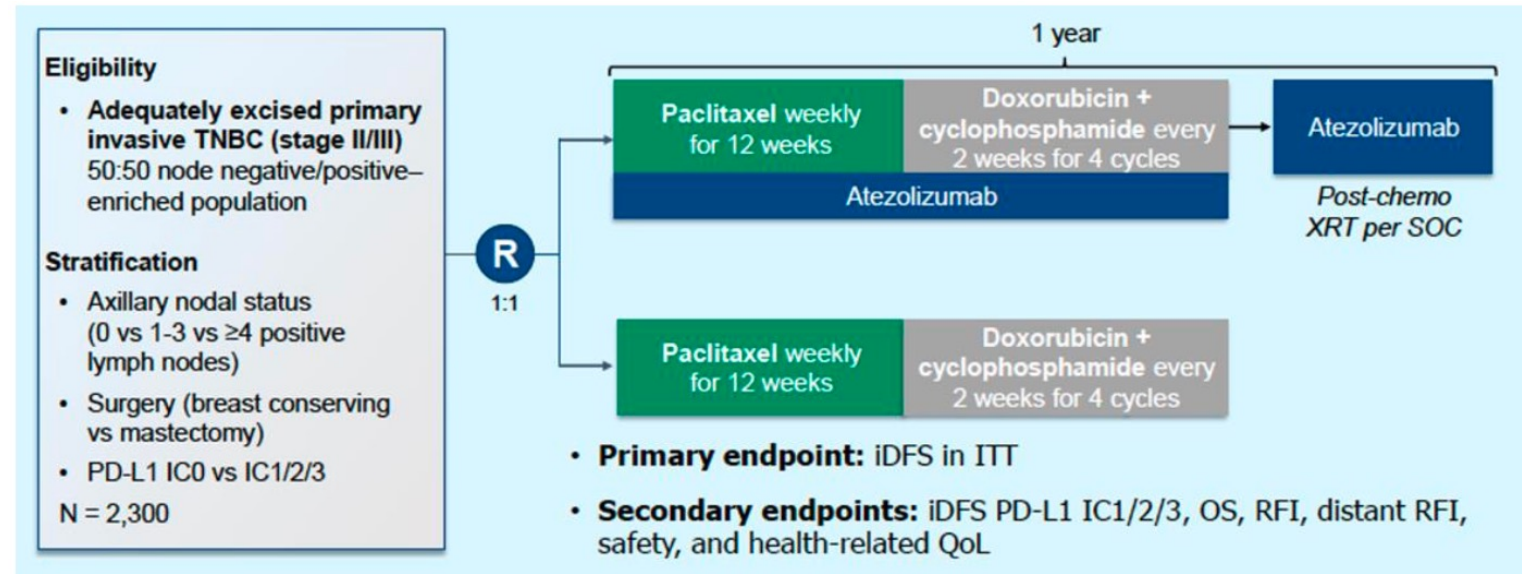


Chemotherapy + Avelumab

What is the contribution  
of adjuvant ONLY  
immunotherapy ?

# IMPASSION 030 – Adjuvant chemotherapy and atezolizumab

- Concurrent **adjuvant** AC + T chemotherapy and atezolizumab
- **N=2300**
- **No improvement invasive disease-free survival**



# A-BRAVE

## KEY ELIGIBILITY CRITERIA

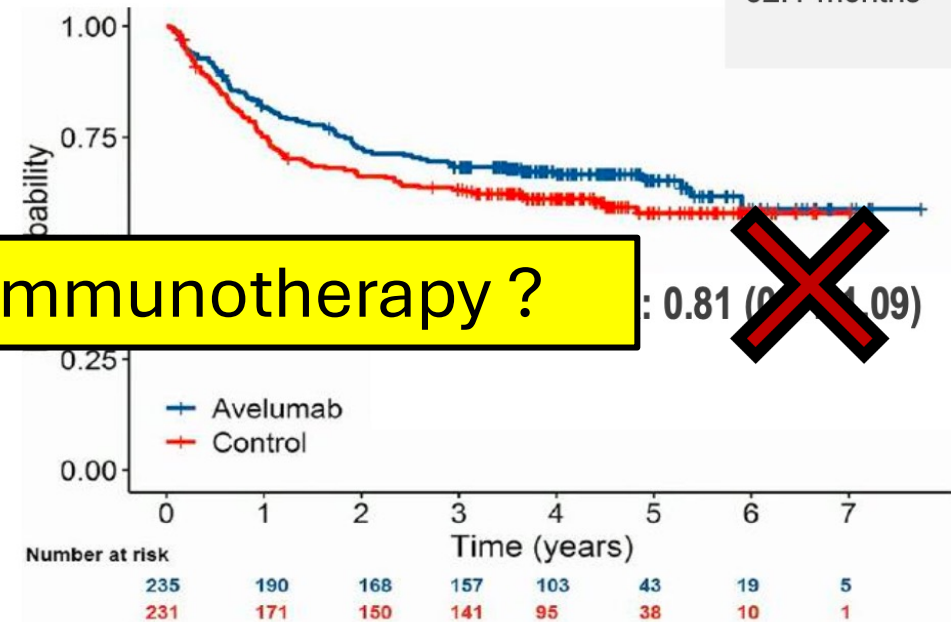
- ECOG PS 0-1
- TNBC (ER & PR <10%, HER2 IHC 0-1+ or 2+/ISH-)<sup>a</sup>
- Anthracycline and taxane (neo)-adjuvant ChemoRx (no preop IO)
- Randomization <10 weeks from last chemo or surgery

**PRIMARY OBJECTIVES:** DFS, DFS in Stratum B

**SECONDARY OBJECTIVES:** OS, safety

## DFS in ITT

Median follow up:  
52.1 months



Is there a role for adjuvant only immunotherapy ?

Observation (n=239)

RANDOMIZED

Avelumab

10 mg/kg, iv, q2w for 52 wks (n=238)

1:1

N=477

**Stratum A (Adjuvant):** pT2N1, pT3-4 N0-3, pN2-3 anyT<sup>b</sup>

**Stratum B (Post-neoadjuvant):** residual invasive carcinoma in the breast and/or axillary lymph nodes<sup>c</sup>

DFS

Avelumab

Control

Δ

HR (95%, CI)

P value

OS, ITT

Events, n

46

62

3-year OS (95%, CI), %

84.8 (79.5-88.8)

76.3 (70.1-81.3)

8.5%

0.66 (0.45-0.97)

0.035

DDFS, ITT

Events, n

66

85

3-year DDFS (95%, CI), %

75.4 (69.3-80.4)

67.9 (61.4-73.5)

7.5%

0.70 (0.50-0.96)

0.0277



# SWOG S1418/NRG BR006

- Await data from SWOG S1418/NRG BR006, a phase 3 trial of pembrolizumab monotherapy for residual
- Large
- Uses pembrolizumab, the currently available agent

## SWOG S1418/NRG BR006 Ph 3 Pembrolizumab for Residual TNBC post NAC

Does everyone need checkpoint inhibition?

An unmet need remains: Biomarkers ?



3 weeks x 1y

- **Registration:**
  - Central PD-L1 testing
- **Stratification:**
  - Nodal stage ypNo vs ypN+
  - Residual tumor  $\geq 2$  vs  $< 2$ cm
  - PD-L1 pos vs neg
  - Prior adjuvant chemo yes vs no

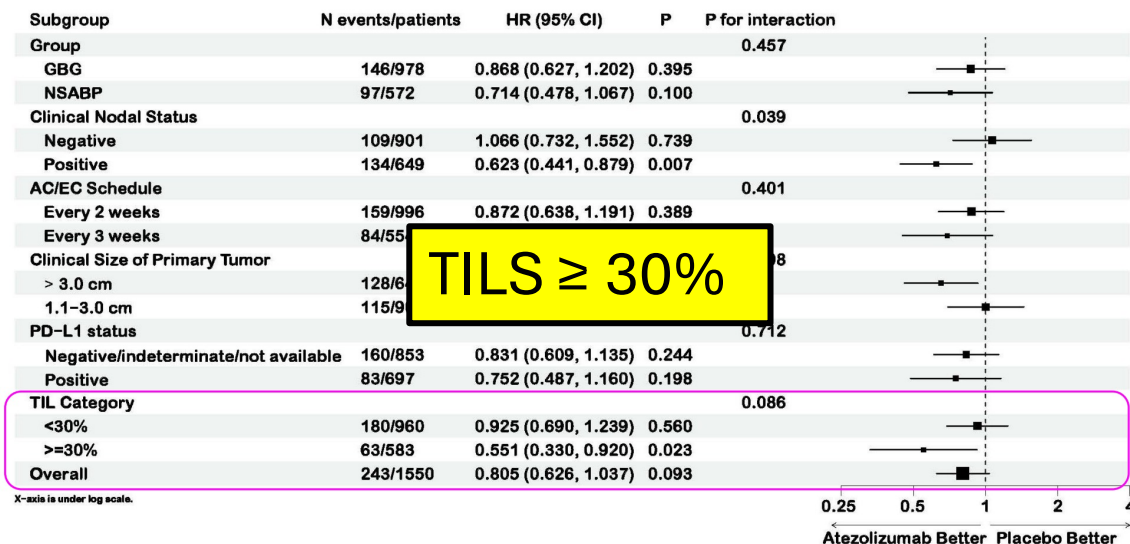
Pis: Puztai/Mamounas

- **Hypothesis:**
  - Pembrolizumab reduces IDFS by 33% c/w observation alone
- **Primary Endpoint:**
  - Invasive DFS in PD-L1-positive and overall cohort
- **Secondary Endpoints:**
  - Toxicity
  - OS
  - DRFS
  - QOL (PROMIS, PRO-CTCAE forms, inflammatory markers)
  - Tissue banking

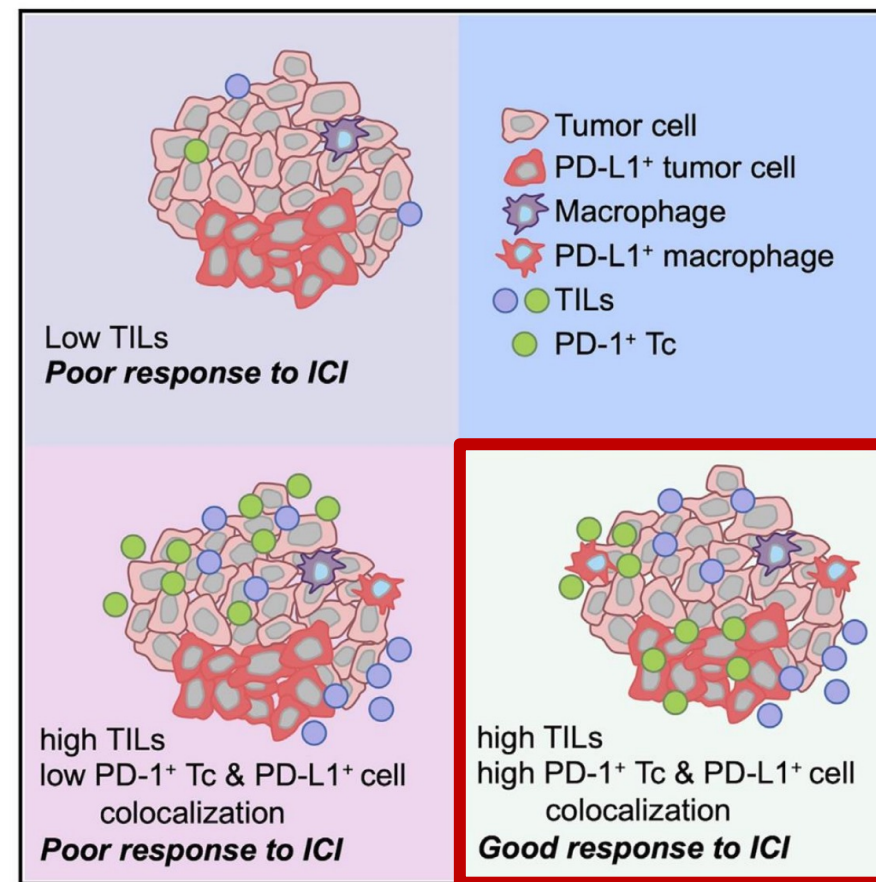
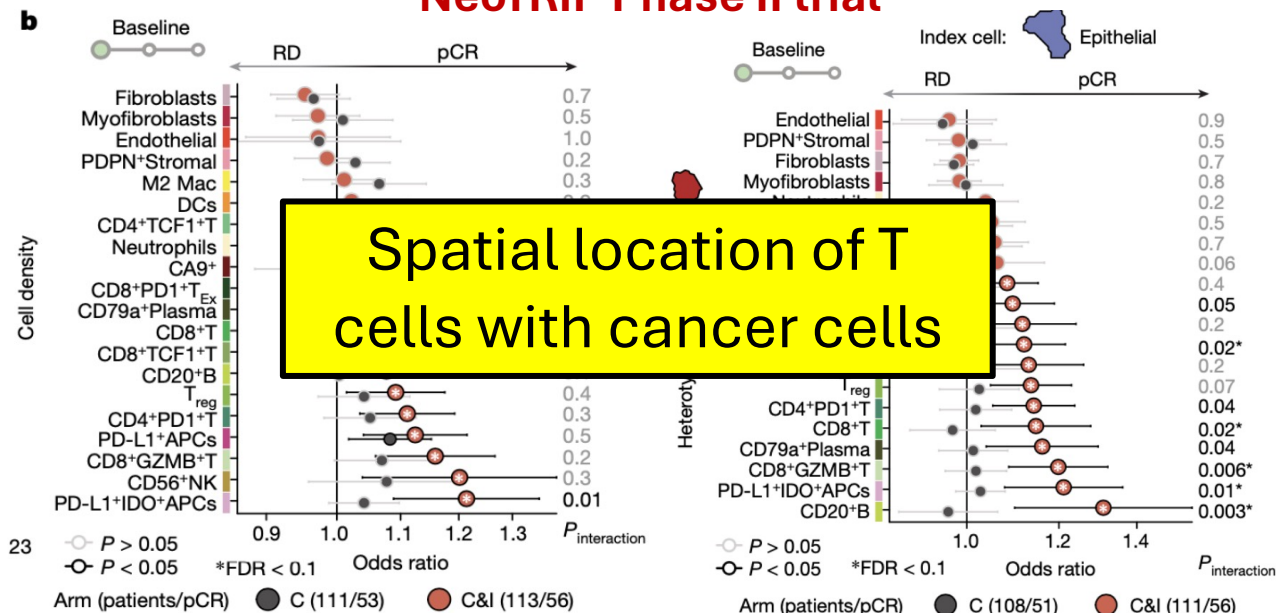


# Biomarkers to predict ICI benefit in early-stage TNBC

## GeparDouze



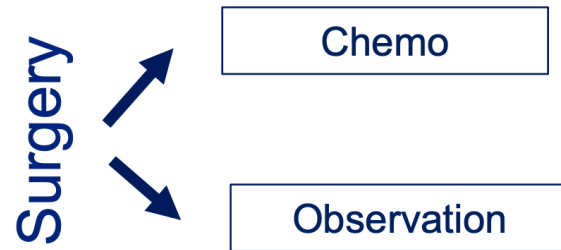
## NeoTRIP Phase II trial



# Personalization of treatment (guided by TILs)

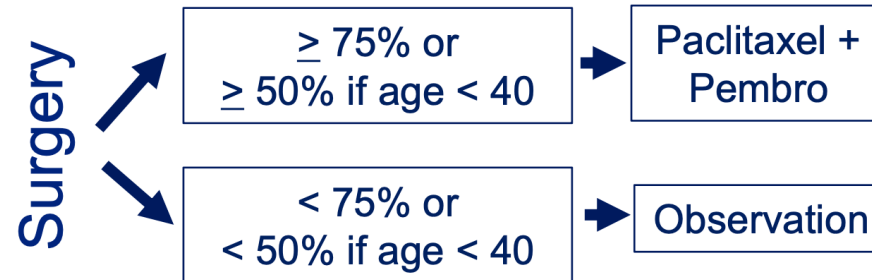
## OPTImaL (n=490)

Stage I TNBC: sTIL  $\geq 50\%$  or  $\geq 75\%$  if  $< 40$  yo



## ETNA (n=354)

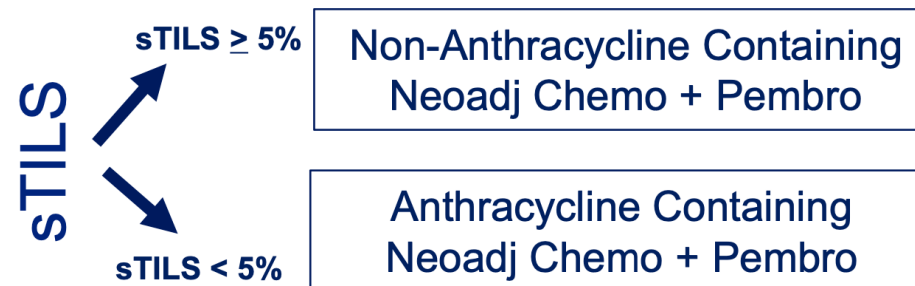
Stage I TNBC: sTIL  $\geq 30\%$



OPTImaL: Kok, ETNA: Pistilli/Oliveira

## NeoTRACT (n=140)

cT1c-T3, N0-N2 TNBC



NeoTRACT: Sharma

# Patient Case

3 cm TNBC  
with 2 LN+

CT and  
bone scan  
negative

Carboplatin-paclitaxel and  
doxorubicin-cyclophosphamide  
with pembrolizumab

7 months



PD-L1 CPS: 15



# IMPASSION 132

Unresectable locally advanced/  
metastatic TNBC  
Prior anthracycline and taxane for  
early TNBC  
Disease progression <12 months  
after last treatment for early TNBC  
with curative intent<sup>a</sup>  
No prior chemotherapy for aTNBC  
Known PD-L1 status (SP142)

R  
1:1

Carboplatin/gemcitabine or capecitabine<sup>b</sup>  
+ atezolizumab 1200 mg q3w

Treatment continued until disease progression or unacceptable toxicity

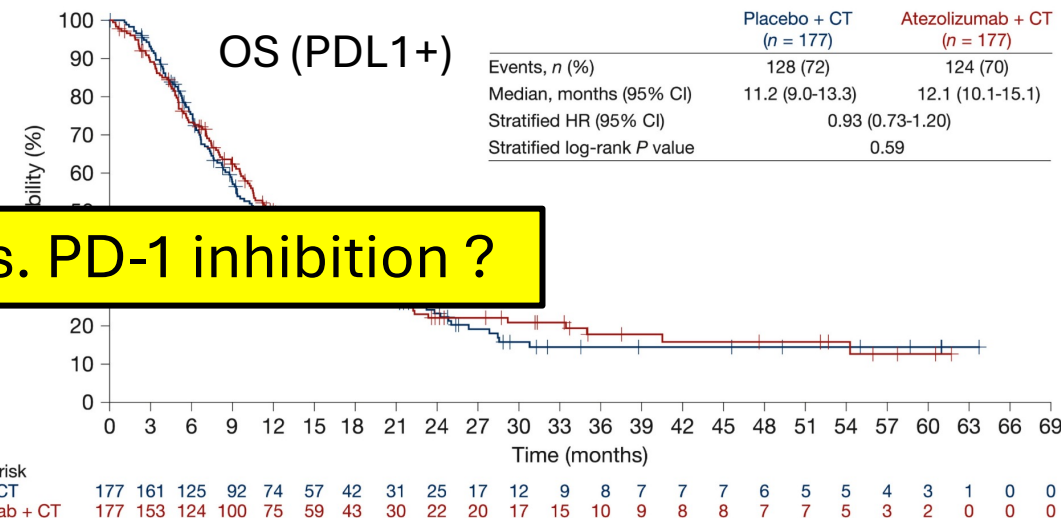
Less benefit with PD-L1 vs. PD-1 inhibition ?

## Stratification factors:

- Visceral (lung and/or liver) metastases
- CT backbone
- PD-L1 status (during all-comer enrolment)

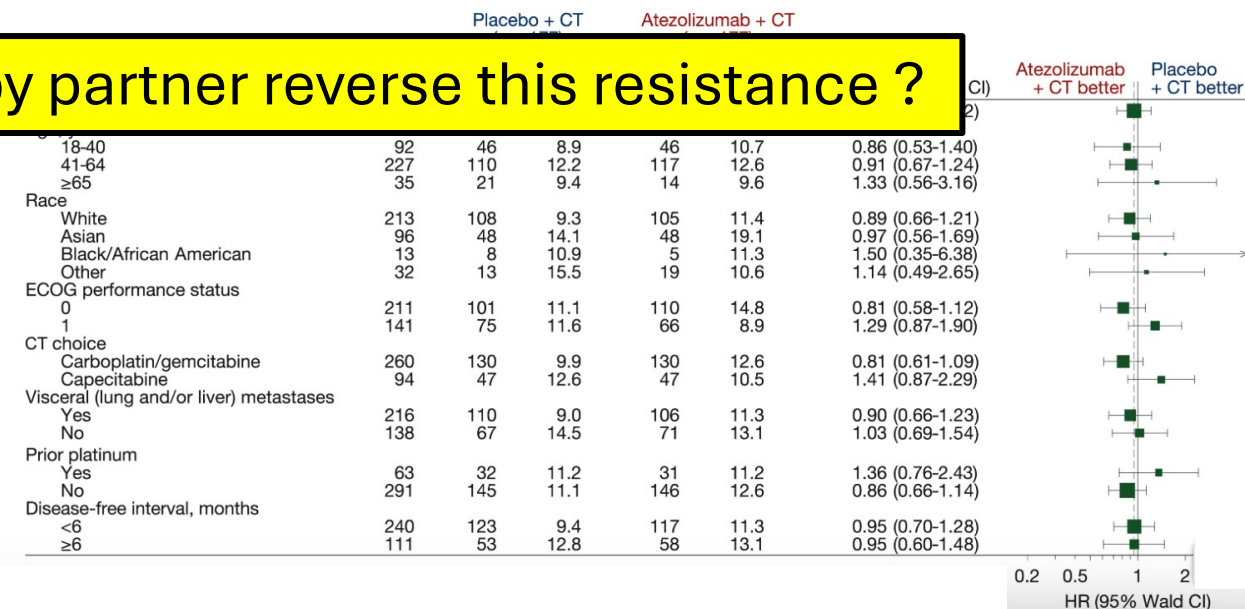
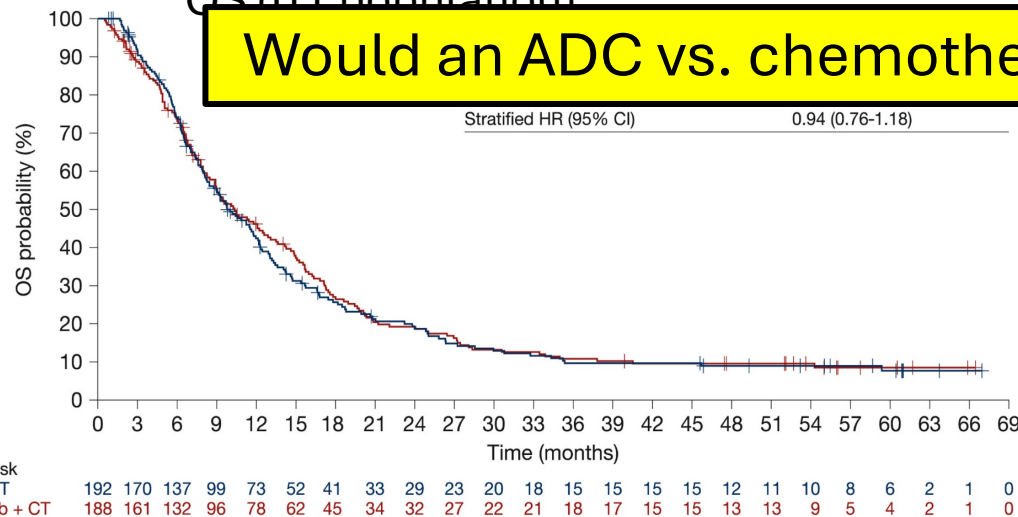
## Primary endpoint:

- OS (hierarchical testing: PD-L1+  
then if positive, modified ITT<sup>c</sup>)



## OS (ITT population)

Would an ADC vs. chemotherapy partner reverse this resistance ?



# OptiTROP-Breast05

PD-L1 CPS <10 78%  
PD-L1 CPS ≥ 10 22%

Multicenter, open-label phase II study (NCT05445908)

## Key eligibility criteria

- No prior systemic therapy for a/m TNBC
- PD-L1 positive or negative<sup>a</sup>
- DFI ≥6 months
- ECOG PS 0–1

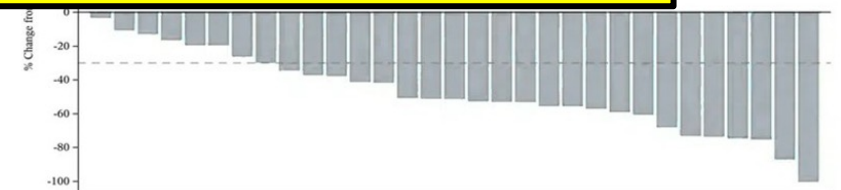
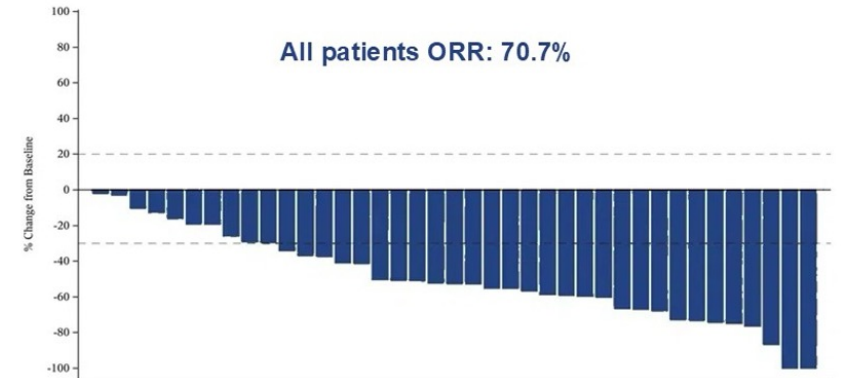
Phase 3 studies of Sac-TMT in 1<sup>st</sup> line PD-L1 negative (CPS < 10) advanced/ metastatic TNBC are ongoing

## Tumor assessment

- Every 6 weeks for the first 18 months and every 12 weeks afterward.

Treatment

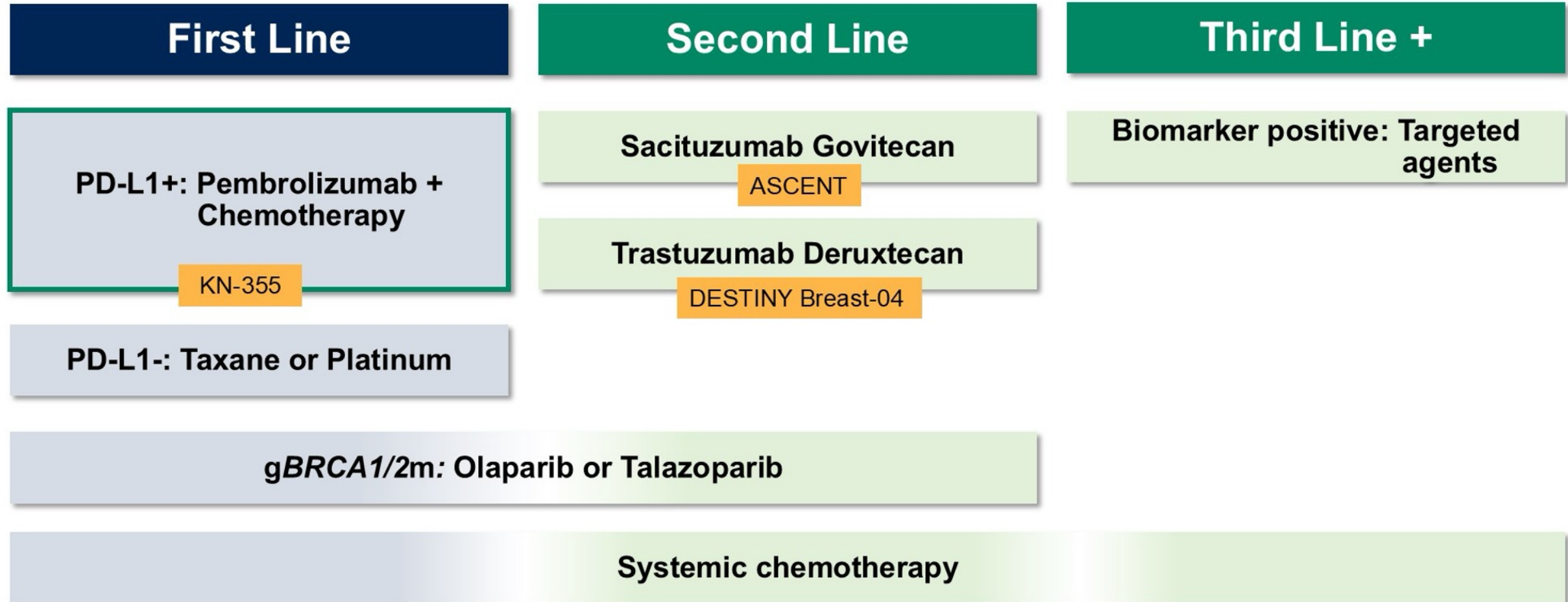
Primary endpoint<sup>b</sup>



	All patients (N = 41)
PFS events, n (%)	20 (48.8)
Median PFS, months (95% CI)	13.4 (9.9, 18.2)
12-month PFS rate (95% CI), %	64.6 (45.0, 78.7)

	PD-L1 CPS <10 (N = 32)
PFS events, n (%)	18 (56.3)
Median PFS, months (95% CI)	13.1 (8.9, 18.2)
12-month PFS rate (95% CI), %	59.1 (37.1, 75.7)

# Treatment landscape for mTNBC



NCCN Guidelines. Breast Cancer. v4.2025.

# Current Challenge in mTNBC

## First Line

PD-L1+: Pembrolizumab +  
Chemotherapy

9.7months Median PFS

23 months Median OS<sup>2,3</sup>

## Second Line

49% Do **not** receive 2L treatment in the real-world<sup>4</sup>

34% **Die** before receiving 2L treatment in the real-world<sup>4</sup>

## Third Line +

NCCN Guidelines. Breast Cancer. v4.2025.

1. NCCN Guidelines. Breast Cancer. v4.2025
2. Cortes et al. Lancet 2020
3. Cortes et al. NEJM 2022
4. Punie et al. The Oncologist 2025





# **Sacituzumab Govitecan Plus Pembrolizumab vs Chemotherapy Plus Pembrolizumab in Patients With Previously Untreated, PD-L1 Positive, Advanced or Metastatic Triple-Negative Breast Cancer: Primary Results From the Randomized, Phase 3 ASCENT-04/KEYNOTE-D19 Study**

Sara M Tolaney<sup>1</sup>, Evandro de Azambuja<sup>2</sup>, Kevin Kalinsky<sup>3</sup>, Sherene Loi<sup>4</sup>, Sung-Bae Kim<sup>5</sup>, Clinton Yam<sup>6</sup>, Bernardo Rapoport<sup>7,8</sup>, Seock-Ah Im<sup>9</sup>, Barbara Pistilli<sup>10</sup>, Wassim McHayleh<sup>11</sup>, David W Cescon<sup>12</sup>, Junichiro Watanabe<sup>13</sup>, Manuel Alejandro Lara Banuelas<sup>14</sup>, Ruffo Freitas-Junior<sup>15</sup>, Javier Salvador Bofill<sup>16</sup>, Maryam Afshari<sup>17</sup>, Dianna Gary<sup>17</sup>, Lu Wang<sup>17</sup>, Catherine Lai<sup>17</sup>, Peter Schmid<sup>18</sup>

# ASCENT-04/KEYNOTE-D19 Study Design

**Previously untreated, locally advanced unresectable, or metastatic TNBC<sup>a</sup>:**

- PD-L1-positive (CPS  $\geq 10$  by the 22C3 assay<sup>b</sup>)
- $\geq 6$  months since treatment in curative setting (prior anti-PD-[L]1 use allowed)

N = 443

R  
1:1

## SG + pembro<sup>d</sup>

(SG 10 mg/kg IV, days 1 and 8 of 21-day cycles; pembro 200 mg, day 1 of 21-day cycles)

n = 221

## Chemo\* + pembro<sup>d</sup>

(paclitaxel 90 mg/m<sup>2</sup> OR nab-paclitaxel 100 mg/m<sup>2</sup> on days 1, 8, & 15 of 28-day cycles, OR gemcitabine 1000 mg/m<sup>2</sup> + carboplatin AUC 2 on days 1 & 8 of 21-day cycles; pembro 200 mg on day 1 of 21-day cycles)

n = 222

*\*Eligible patients who experienced BICR-verified disease progression were offered to cross-over to receive 2L SG monotherapy*

All treatment, including SG or chemo, was continued until BICR-verified disease progression or unacceptable toxicity

## End points

### Primary

- PFS by BICR<sup>e</sup>

### Secondary

- OS
- ORR, DOR by BICR<sup>e</sup>
- Safety
- QoL

## Stratification factors:

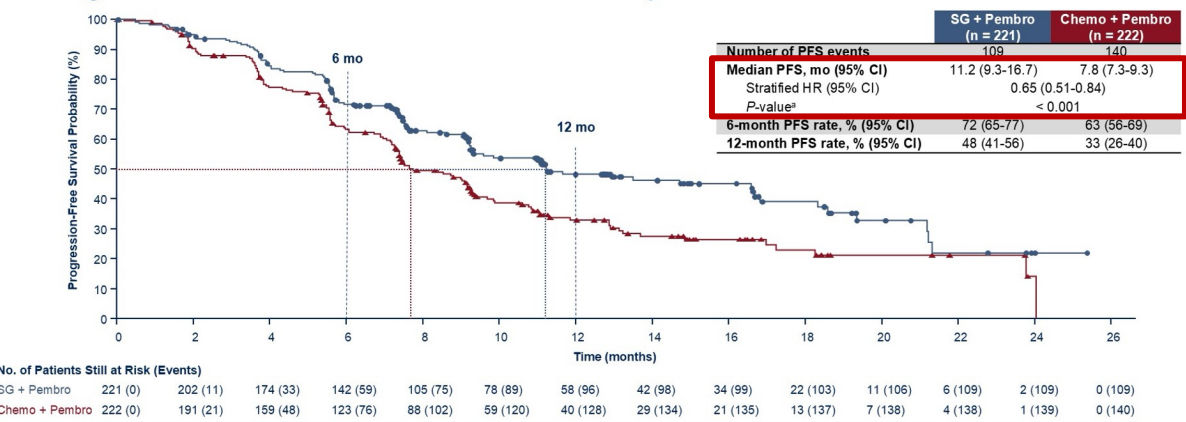
- De novo mTNBC<sup>c</sup> vs recurrent within 6 to 12 months from completion of treatment in curative setting vs recurrent > 12 months from completion of treatment in curative setting
- US/Canada/Western Europe vs the rest of the world
- Prior exposure to anti-PD-(L)1 (yes vs no)

## ITT Population

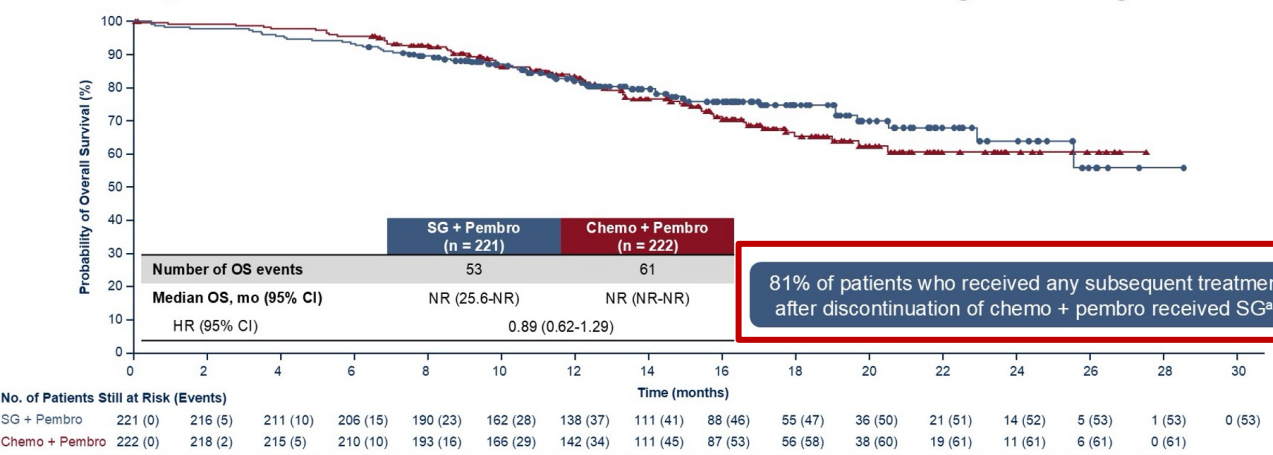
	SG + Pembro (n = 221)	Chemo + Pembro (n = 222)
<b>Curative treatment-free interval, n (%)</b>		
De novo	75 (34)	75 (34)
Recurrent within 6-12 mo	40 (18)	40 (18)
Recurrent > 12 mo	106 (48)	107 (48)
<b>Prior anti-PD-(L)1 therapy,<sup>a</sup> n (%)</b>		
	9 (4)	11 (5)

# ASCENT-04

## Progression-Free Survival by BICR



## Descriptive Overall Survival at Primary Analysis



	SG + Pembro		Chemo + Pembro		Unstratified HR (95% CI)	Unstratified HR (95% CI)
	n	Median PFS, mo (95% CI)	n	Median PFS, mo (95% CI)		
Curative treatment-free interval						
De novo	75	8.1 (7.3-18.6)	75	7.7 (6.1-11.9)		0.89 (0.59-1.34)
Recurrent 6-12 mo	40	9.9 (5.7-16.8)	40	7.2 (4.4-9.1)		0.62 (0.36-1.08)
Recurrent > 12 mo	106	16.6 (11.0-NR)	107	8.7 (7.3-10.8)		0.52 (0.35-0.76)
Prior (neo)adjuvant anti-PD-(L)1 therapy						
Yes	9	7.5 (0.9-NR)	11	6.6 (2.1-NR)		1.08 (0.31-3.75)
No	212	11.7 (9.3-16.8)	211	7.8 (7.4-9.3)		0.65 (0.50-0.84)

Variable	SG + Pembro (n = 221)	Chemo + Pembro (n = 222)
Objective response rate <sup>a</sup> (95% CI), %	60 (52.9-66.3)	53 (46.4-59.9)
Stratified odds ratio (95% CI)	1.3 (0.9-1.9)	
Best overall response, n (%)		
Complete response	28 (13)	18 (8)
Partial response	104 (47)	100 (45)
Stable disease	70 (32)	70 (32)
Stable disease ≥ 6 months	23 (10)	29 (13)
Progressive disease	9 (4)	26 (12)
Not evaluable	10 (5)	8 (4)
Time to response, <sup>b</sup> median (range), months	1.9 (1.0-9.3)	1.9 (1.1-11.4)



## Adverse Events of Special Interest

AESI, <sup>a</sup> n (%)		SG + Pembro (n = 221)		Chemo + Pembro (n = 220)	
		Any Grade	Grade ≥ 3	Any Grade	Grade ≥ 3
SG SIs	Neutropenia <sup>b</sup>	143 (65)	104 (47)	132 (60)	100 (45)
	Hypersensitivity <sup>b</sup>	43 (19)	4 (2)	51 (23)	5 (2)
<p>Results from ASCENT-04/KEYNOTE-D19 support the use of SG + pembro as a potential new standard of care for patients with previously untreated ER+, locally advanced unresectable or metastatic TNBC</p>					
Pembro AESIs	Hypothyroidism <sup>b</sup>	4 (2)	0	19 (9)	0
	Hypophysitis <sup>b</sup>	2 (1)	0	2 (1)	0
	Hyperthyroidism <sup>b</sup>	2 (1)	0	5 (2)	0
	Severe skin reactions, <sup>b</sup> including Stevens-Johnson syndrome and toxic epidermal necrolysis	2 (1)	2 (1)	2 (1)	2 (1)
	Hepatitis <sup>b</sup>	1 (< 1)	0	2 (1)	2 (1)
	Adrenal insufficiency <sup>b</sup>	1 (< 1)	0	2 (1)	1 (< 1)
	Pancreatitis <sup>b</sup>	0	0	2 (1)	2 (1)

**PRACTICE-CHANGING!**

**No new safety signals**



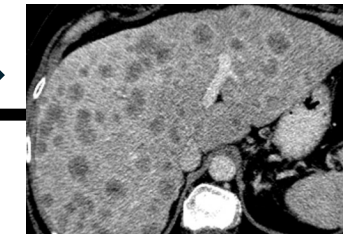
# Patient Case

3 cm TNBC  
with 2 LN+

CT and  
bone scan  
negative

Carboplatin-paclitaxel and  
doxorubicin-cyclophosphamide  
with pembrolizumab

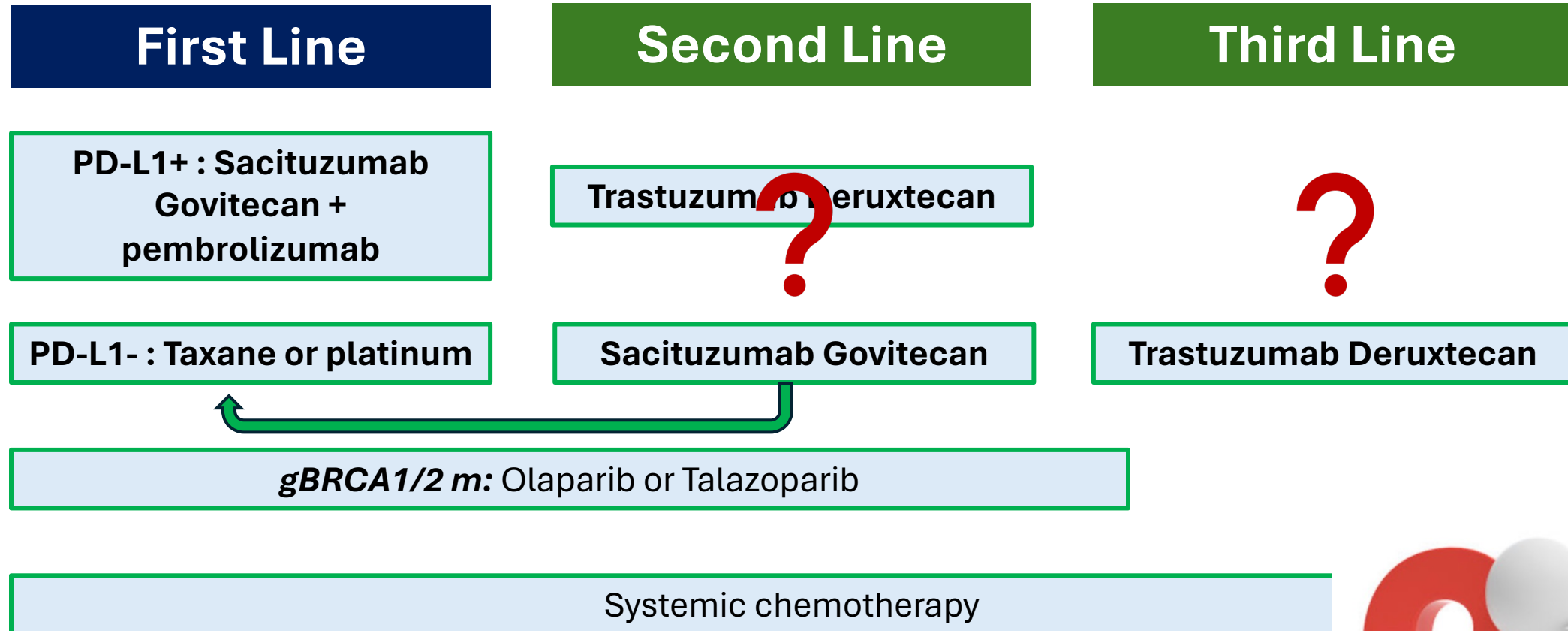
7 months



PD-L1 CPS: 15

Sacituzumab Govitecan  
with pembrolizumab

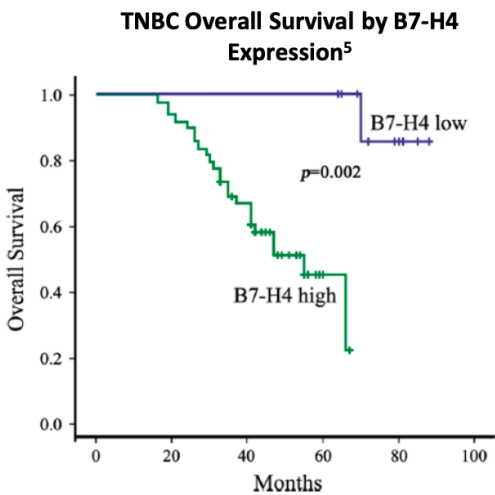
# Treatment landscape for mTNBC



# Treatment post topo-1 ADC: High unmet need

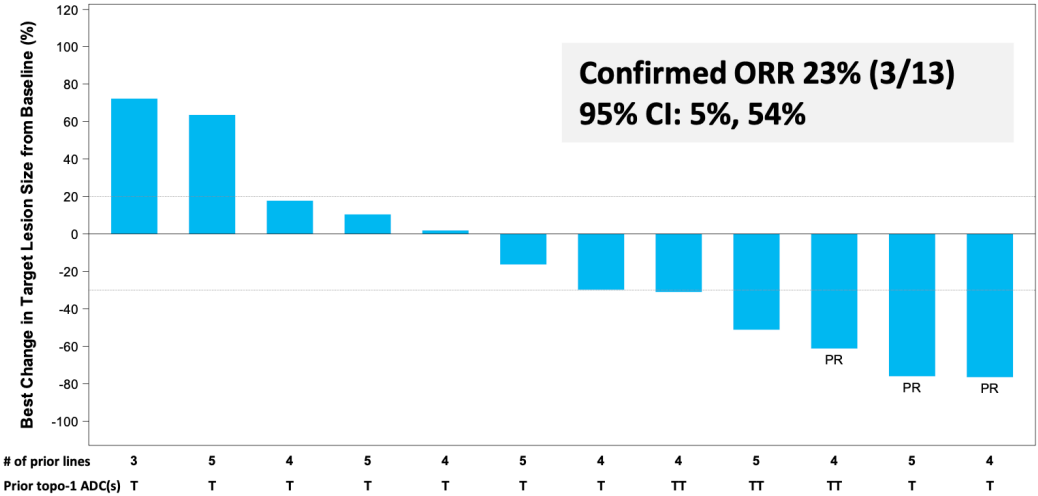
Single agent chemotherapy: ORR: 5%, PFS: 7 weeks, OS: 6.7 months

## Emiltatug Ledadotin (Emi-Le): B7-H4-Directed ADC



	TNBC (N=44)
Median age	49.5
Median prior lines in locally advanced/ metastatic setting (range)	4 (1-9)
Prior Topo-1 ADCs received, n (%)	
Prior trastuzumab deruxtecan	14 (31.8%)
Prior sacituzumab govitecan	38 (86.4%)
Prior both	11 (25.0%)
Prior either	41 (93.2%)
B7-H4 expression <sup>1</sup> , n (%)	
TPS status known	36 (81.8%)
High (TPS $\geq 70$ )	14 (38.9%)
Low (TPS $< 70$ )	22 (61.1%)
TPS not yet determined	8 (18.2%)

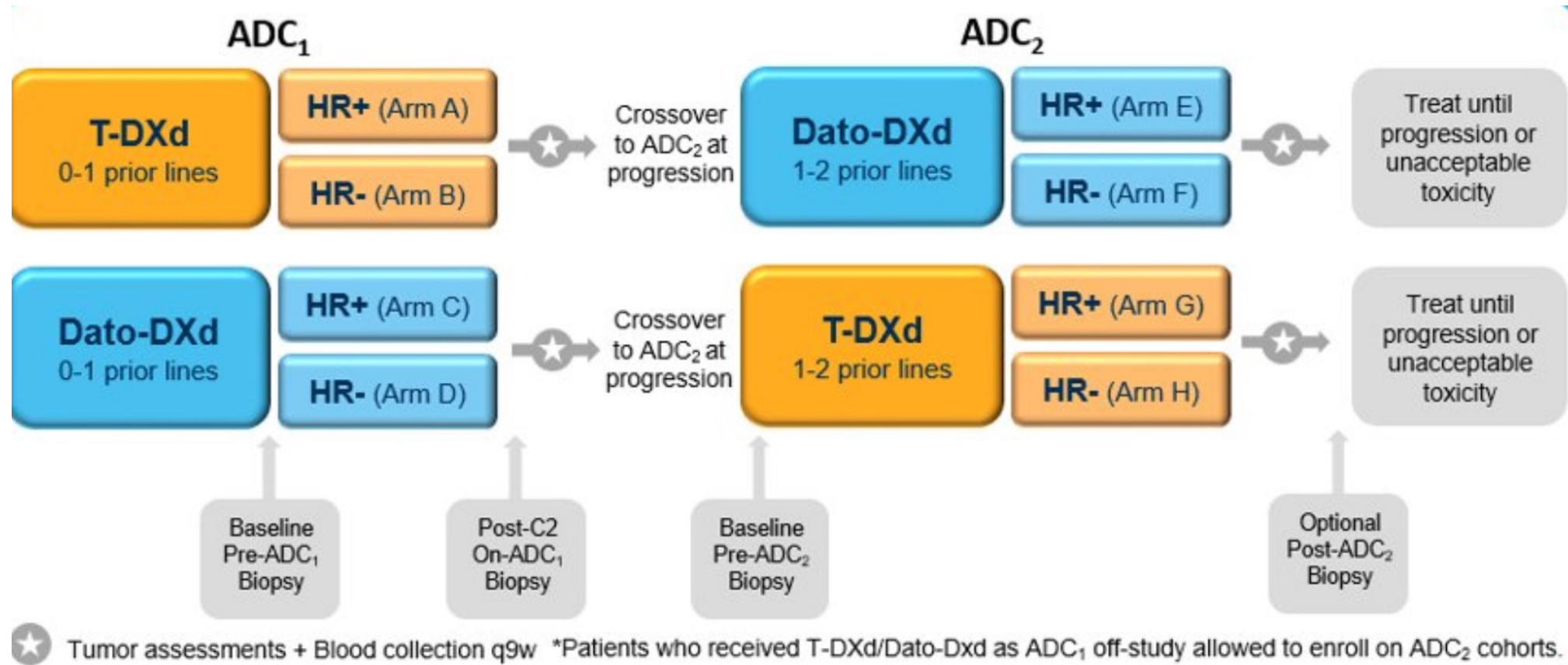
Intermediate Dose Range (38.1-67.4 mg/m<sup>2</sup>)



No confirmed responses observed in B7-H4 low patients

# Ongoing Clinical Trials

## TRADE Dxd Trial: Treatment of ADC-Refractory Breast Cancer with Dato-Dxd or T-Dxd



# Take Home Points

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- Chemotherapy is recommended for T1cN0 TNBC
- KEYNOTE 522 remains the standard of care for stage II-III TNBC
- There is no role for adjuvant checkpoint inhibition as monotherapy or with chemotherapy if no ICI in neoadjuvant setting
- Sacituzumab govitecan with pembrolizumab is new standard of care for metastatic PD-L1 positive TNBC

## Future Directions

- Precision treatment guided by biomarkers
- With ADCs likely getting approved in early stage:  
Re-evaluate treatment algorithm for mTNBC

