Immunoterapia e carcinoma mammario: quali evidenze dalla letteratura? Quali indicazioni per la pratica clinica?

Emilia Montagna
Divisione Senologia Medica
Istituto Europeo di Oncologia
Milano

Declaration of Interests

Emilia Montagna

Institutional financial interests with commercial entities:

- Novartis
- Pierre fabre

- **No personal financial interests with any commercial entity**

Agenda

- **Quali evidenze dalla letteratura?**

Prima considerazione

- I dati di letteratura più rilevanti sono

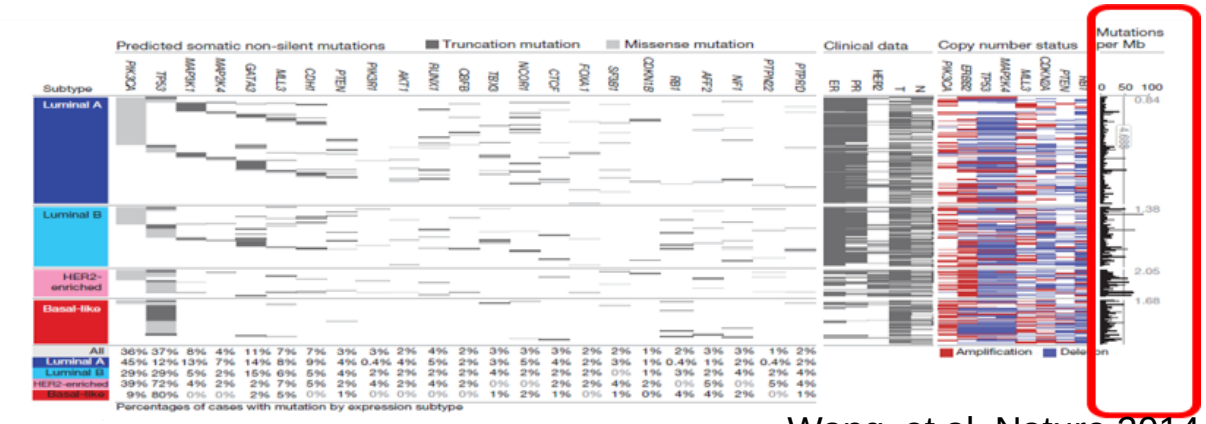
relativi alla pazienti con tumore mammario *triplo negativo*

- I dati di applicabilità clinica si riferiscono alle pazienti con tumore

mammario *triplo negativo -> cambiamento nella pratica clinica*

RATIONALE FOR IMMUNOTHERAPY IN TNBC

1) Higher mutational rate

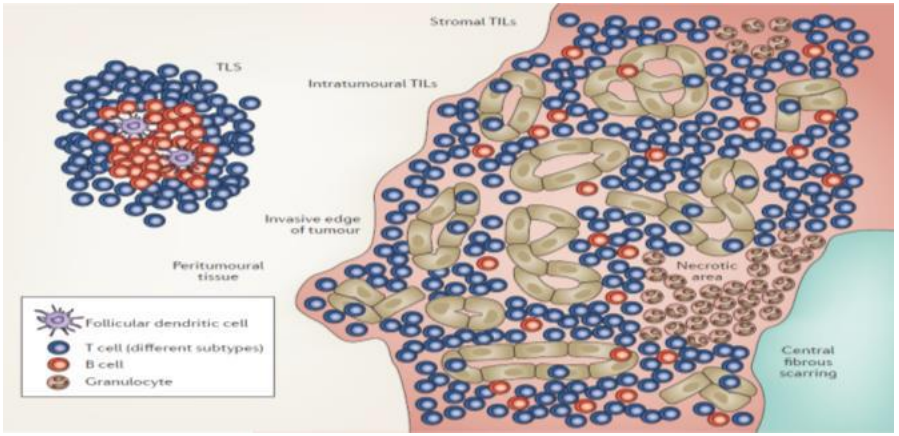


Wang, et al. Nature 2014

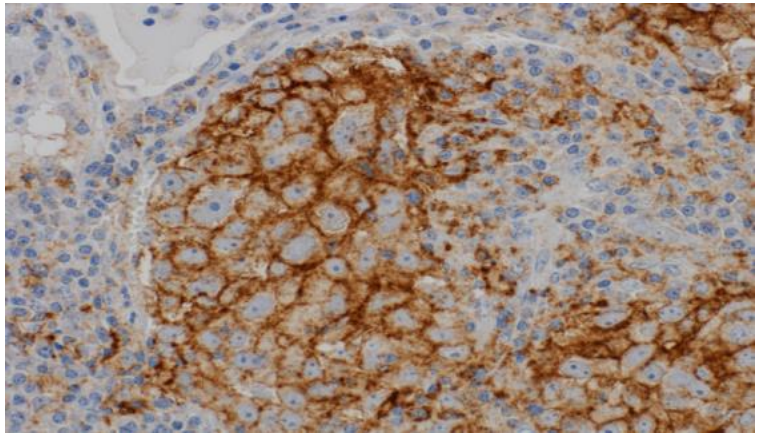
2) Higher TILs

Agenda

3) Higher PD-L1 expression

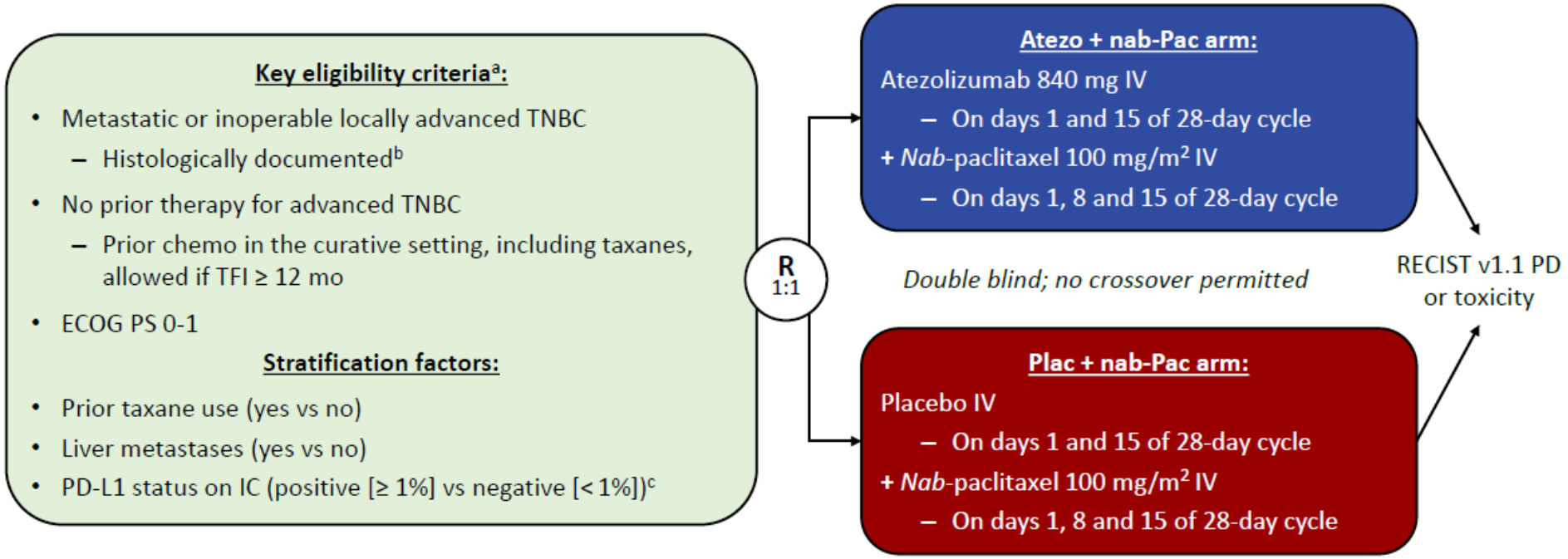


Cimino-Matthews, et al. Hum Pathol 2013



Mittendorf, et al. Cancer ImmunolRes 2014;

IMpassion130 (Phase III) – Study Design (TNBC metastatic disease)



- Co-primary endpoints were **PFS** and **OS** in the **ITT and PD-L1+ populations**[d].
- Key secondary efficacy endpoints (ORR and DOR) and safety were also evaluated.

IC, tumour-infiltrating immune cell; TFI, treatment-free interval. [a] ClinicalTrials.gov: NCT02425891. [b] Locally evaluated per ASCO–College of American Pathologists (CAP) guidelines. [c] Centrally evaluated per VENTANA SP142 IHC assay (double blinded for PD-L1 status). [d] Radiological endpoints were investigator assessed (per RECIST v1.1).

Emens et al, ESMO 2020

IMpassion130 – Study Population

Characteristic	Atezo + nab-Pac (N = 451)	Plac + nab-Pac (N = 451)
Median age (range), y	55 (20-82)	56 (26-86)
Female, n (%)	448 (99%)	450 (100%)
Race, n (%)[a]		
White	308 (68%)	301 (67%)
Asian	85 (19%)	76 (17%)
Black/African American	26 (6%)	33 (7%)
Other/multiple	20 (4%)	26 (6%)
ECOG PS, n (%)[b,c]		
0	256 (57%)	270 (60%)
1	193 (43%)	179 (40%)
Prior (neo)adjuvant treatment, n (%)	284 (63%)	286 (63%)
Prior taxane	231 (51%)	230 (51%)
Prior anthracycline	243 (54%)	242 (54%)

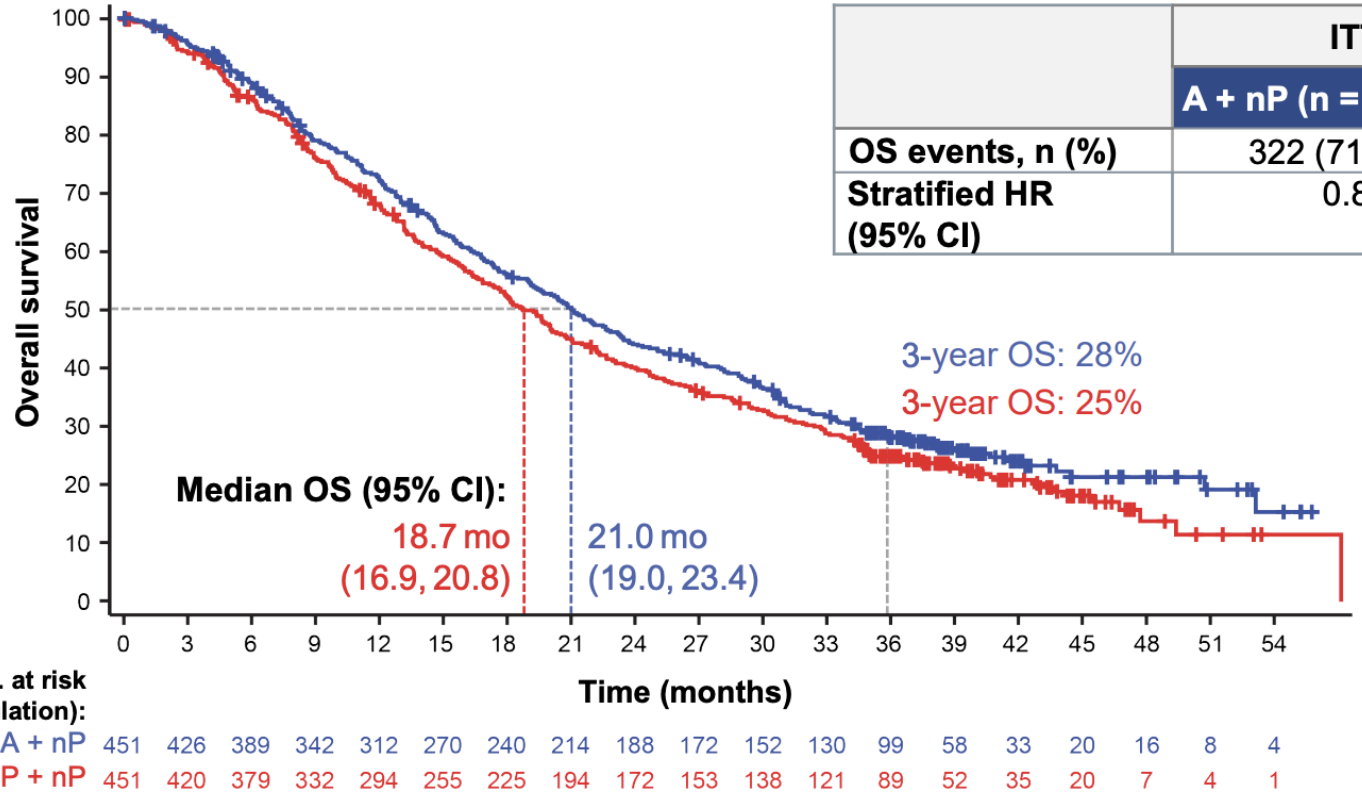
Characteristic	Atezo + nab-Pac (N = 451)	Plac + nab-Pac (N = 451)
Metastatic disease, n (%)	404 (90%)	408 (91%)
No. of sites, n (%)[d]		
0-3	332 (74%)	341 (76%)
≥ 4	118 (26%)	108 (24%)
Site of metastatic disease, n (%)		
Lung	226 (50%)	242 (54%)
Bone	145 (32%)	141 (31%)
Liver	126 (28%)	118 (26%)
Brain	30 (7%)	31 (7%)
Lymph node only[d]	33 (7%)	23 (5%)
PD-L1+ (IC), n (%)	185 (41%)	184 (41%)

Data cutoff: 17 April 2018. [a] Race was unknown in 12 patients in the Atezo + nab-Pac arm and 15 in the Plac + nab-Pac arm. [b] Of n = 450 in each arm. [c] ECOG PS before start of treatment was 2 in 1 patient per arm. [d] Of n = 450 in the Atezo + nab-Pac arm and n = 449 in the Plac + nab-Pac arm arm.

Emens et al, ESMO 2020

IMpassion130 – Final OS analysis

OS in the ITT population



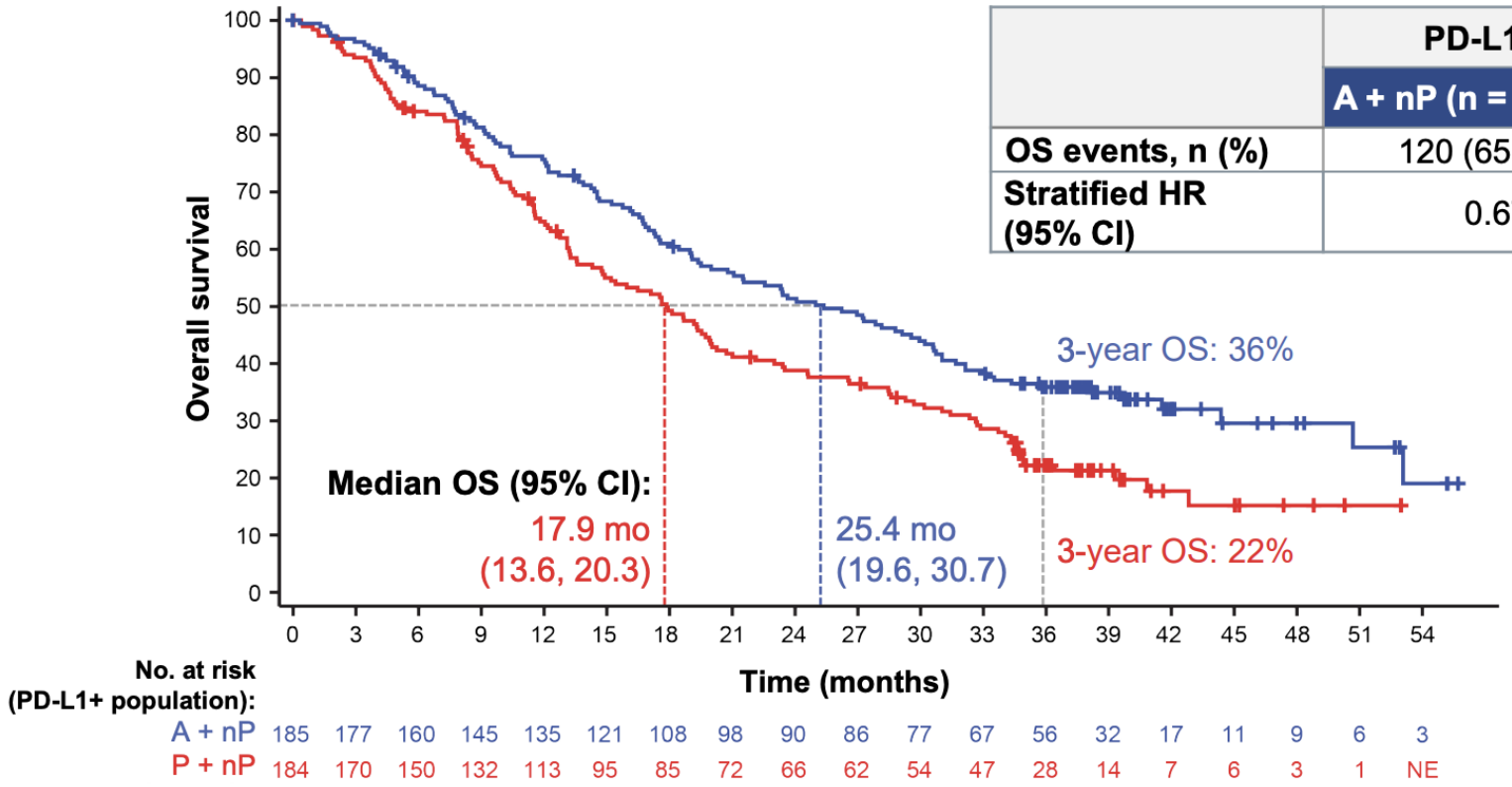
	ITT population	
	A + nP (n = 451)	P + nP (n = 451)
OS events, n (%)	322 (71)	344 (76)
Stratified HR (95% CI)	0.87 (0.75, 1.02) *P* = 0.077	

Emens et al, ESMO 2020

IMpassion130 – Final OS analysis

OS in the PD-L1 IC+ population

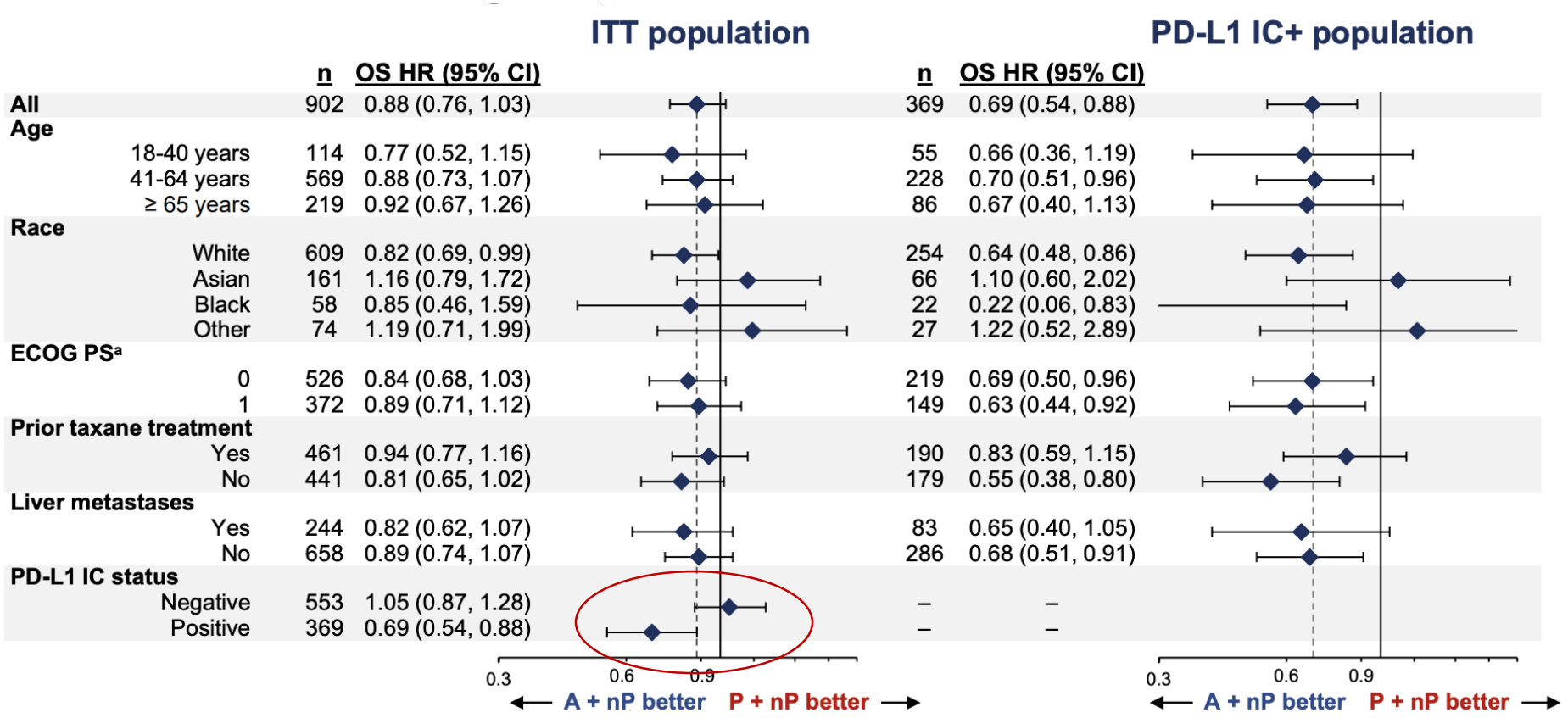
	PD-L1 IC+ population	
	A + nP (n = 185)	P + nP (n = 184)
OS events, n (%)	120 (65)	139 (76)
Stratified HR (95% CI)	0.67 (0.53, 0.86)[a]	



+7.5-mo median OS improvement

Emens et al, ESMO 2020

IMpassion130 – Final OS analysis



Emens et al, ESMO 2020

IMpassion130 – Safety

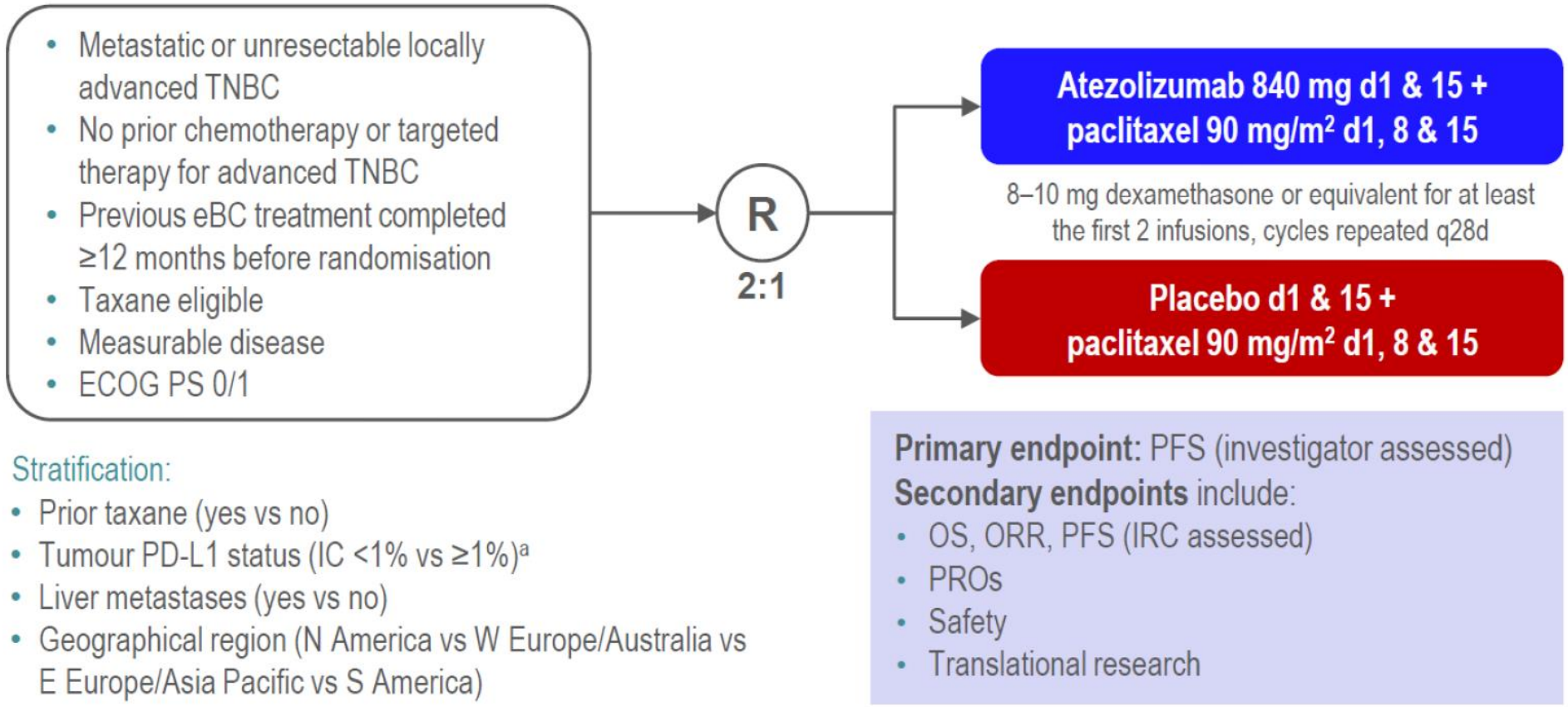
AESI, n (%)[a]	Plac + nab-Pac (n = 438)		Atezo + nab-Pac (n = 452)	
	Any Grade	Grade 3-4	Any Grade	Grade 3-4
Hepatitis (all)	62 (14.2%)	13 (3.0%)	69 (15.3%)	23 (5.1%)
Hepatitis (diagnosis)	7 (1.6%)	1 (0.2%)	10 (2.2%)	6 (1.3%)
Hepatitis (lab abnormalities)	58 (13.2%)	12 (2.7%)	62 (13.7%)	17 (3.8%)
Hypothyroidism	19 (4.3%)	0	78 (17.3%)	0
Hyperthyroidism	6 (1.4%)	0	20 (4.4%)	1 (0.2%)
Adrenal insufficiency	0	0	4 (0.9%)	1 (0.2%)
Pneumonitis	1 (0.2%)	0	14 (3.1%)	1 (0.2%)
Colitis	3 (0.7%)	1 (0.2%)	5 (1.1%)	1 (0.2%)
Pancreatitis*	0	0	2 (0.4%)	1 (0.2%)
Diabetes mellitus	2 (0.5%)	1 (0.2%)	1 (0.2%)	1 (0.2%)
Other AESI (Rash)	114 (26.0%)	2 (0.5%)	154 (34.1%)	4 (0.9%)

There were no reported events of Guillian-Barre syndrome, Hypophysitis, Myasthenia Gravis or Myocarditis

*Enzyme elevations only

Emens et al, ESMO 2020

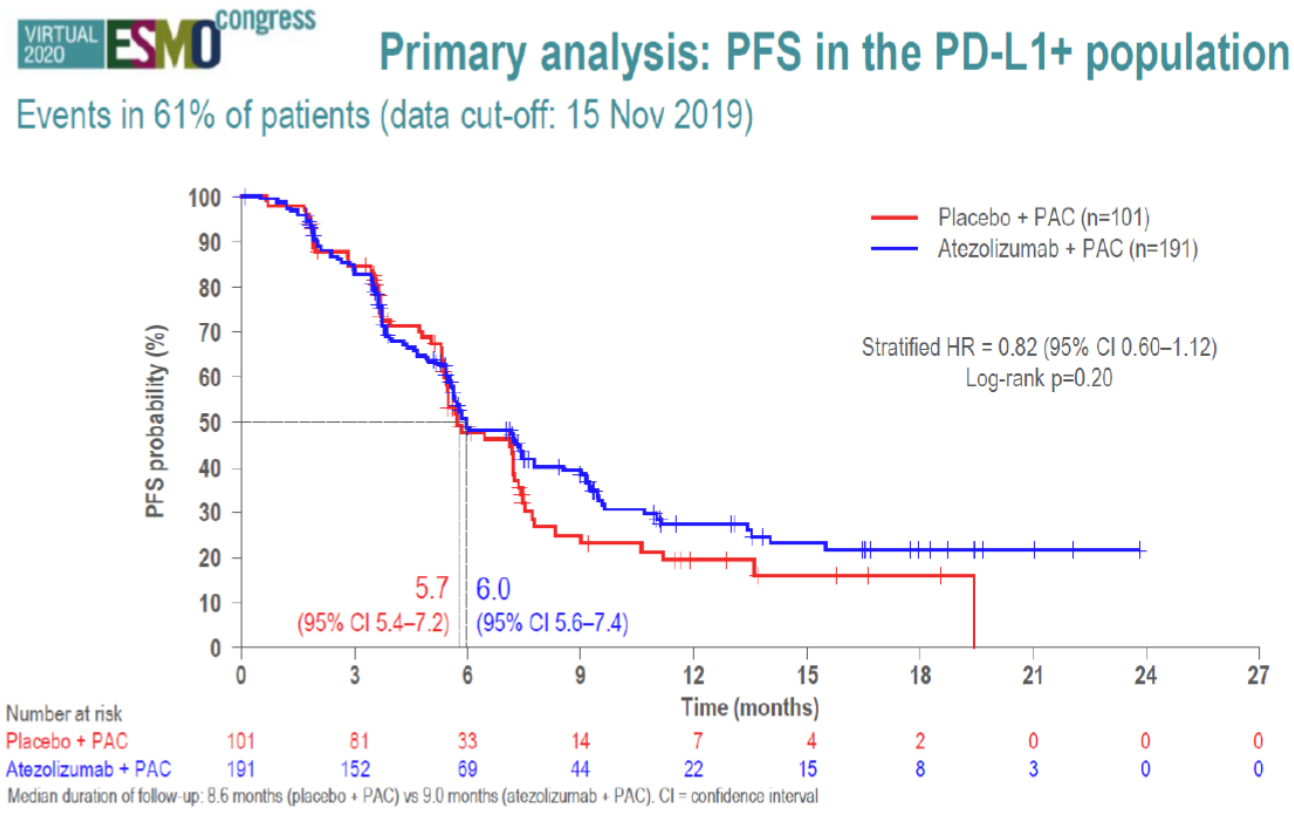
IMpassion131 – Study design (TNBC metastatic disease)

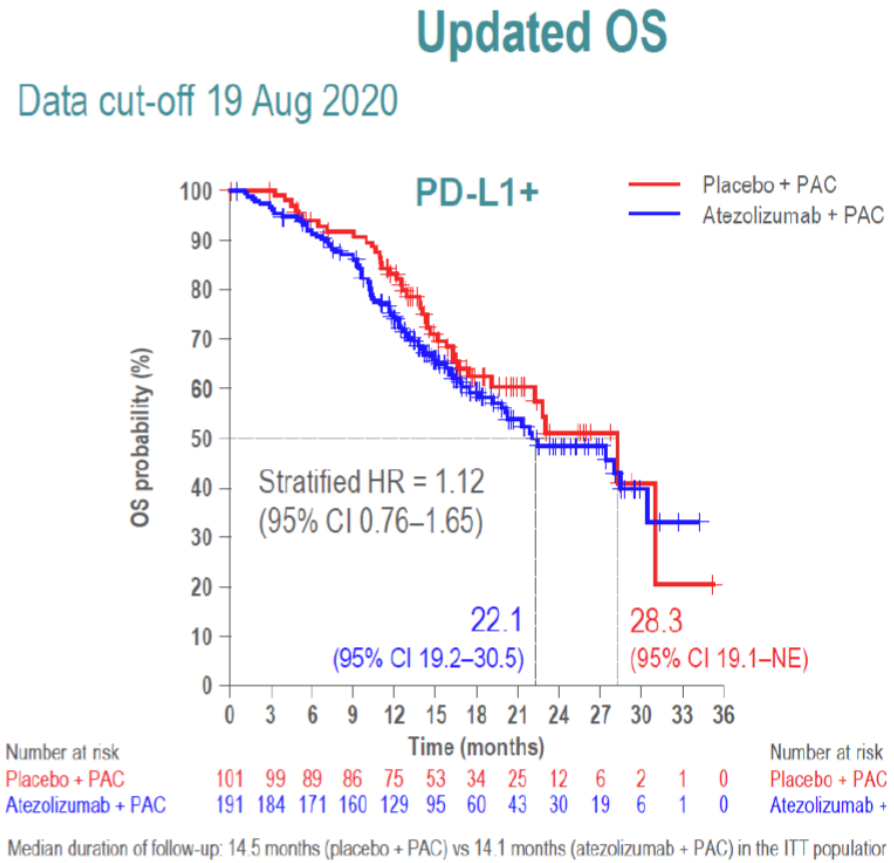


[a]PD-L1 IC: area of PD-L1-stained tumour-infiltrating ICs as a percentage of tumour area by VENTANA SP142 immunohistochemistry assay. eBC = early breast cancer; ECOG PS = Eastern Cooperative Oncology Group performance status; IC = immune cell; IRC = independent review committee; ORR = objective response rate; PRO = patient-reported outcome; q28d = every 28 days; R = randomisation

Miles et al, ESMO 2020

IMpassion131 – Results





No benefit observed from the addition of Atezolizumab

Miles et al, ESMO 2020

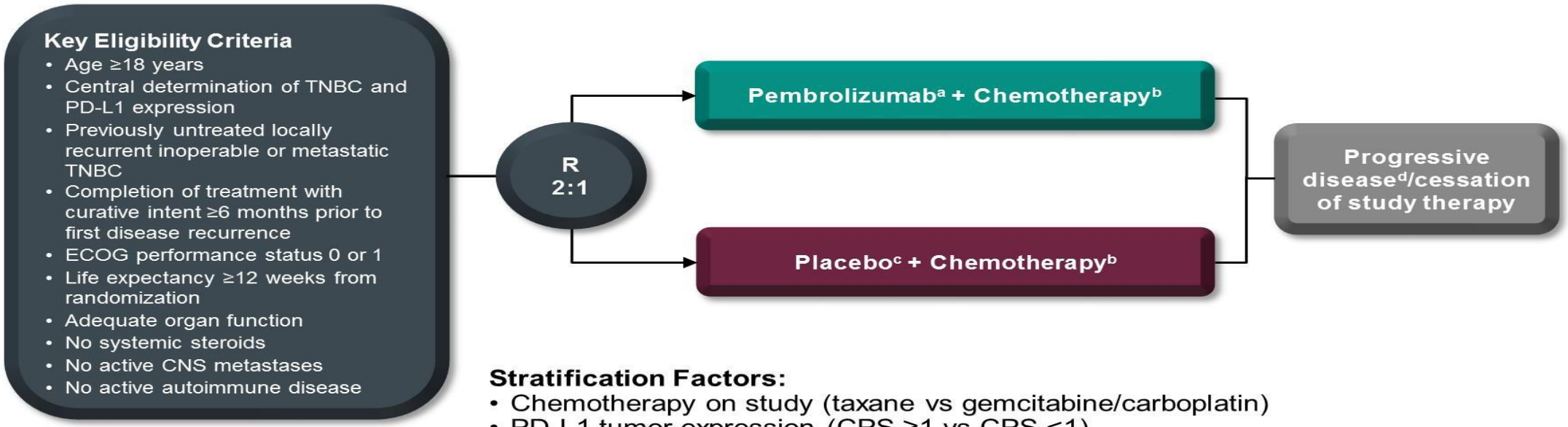
Possibile impatto degli steroidi sull'efficacia della Immunoterapia

CLINICAL CANCER RESEARCH | TRANSLATIONAL CANCER MECHANISMS AND THERAPY

Concurrent Dexamethasone Limits the Clinical Benefit of Immune Checkpoint Blockade in Glioblastoma

J. Bryan Iorgulescu[1,2], Prafulla C. Gokhale[3], Maria C. Speranza[1], Benjamin K. Eschle[3], Michael J. Poitras[3], Margaret K. Wilkens[3], Kara M. Soroko[3], Chhayheng Chhoeu[3], Aine Knott[3], Yan Gao[1], Mary Jane Lim-Fat[4], Gregory J. Baker[5], Dennis M. Bonal[6], Quang-Dé Nguyen[6], Gareth R. L. Grant[7], Keith L. Ligon[2,8,9], Peter K. Sorger[5], E. Antonio Chiocca[10], Ana C. Anderson[11,12], Paul T. Kirschmeier[3], Arlene H. Sharpe[12], Gordon J. Freeman[1], and David A. Reardon[1,4]

KEYNOTE-355 Study Design (NCT02819518)

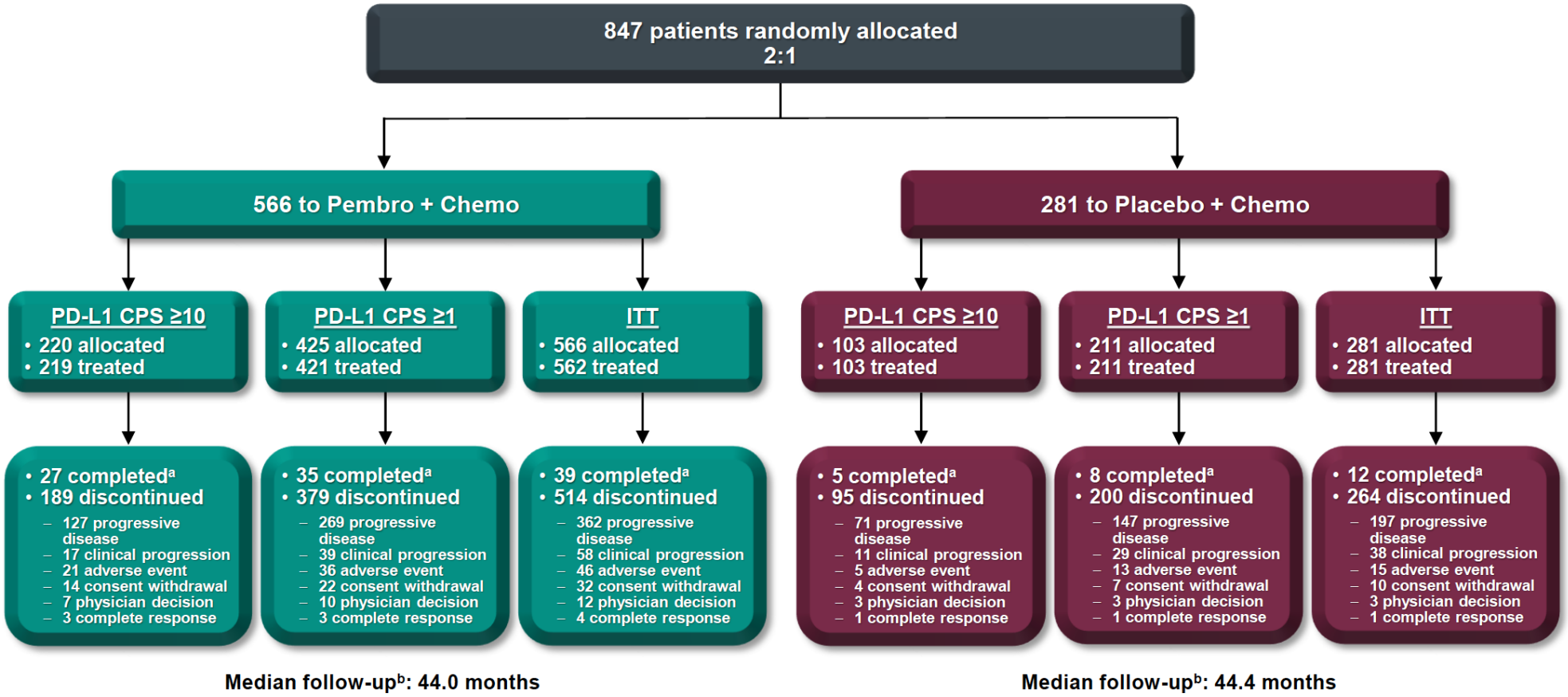


Stratification Factors:
- Chemotherapy on study (taxane vs gemcitabine/carboplatin)
- PD-L1 tumor expression (CPS ≥1 vs CPS <1)
- Prior treatment with same class chemotherapy in the neoadjuvant or adjuvant setting (yes vs no)

[a]Pembrolizumab 200 mg intravenous (IV) every 3 weeks (Q3W)
[b]Chemotherapy dosing regimens are as follows:
Nab-paclitaxel 100 mg/m^2 IV on days 1, 8, and 15 every 28 days
Paclitaxel 90 mg/m^2 IV on days 1, 8, and 15 every 28 days
Gemcitabine 1000 mg/m^2/carboplatin AUC 2 on days 1 and 8 every 21 days

[c]Normal saline
[d]Treatment may be continued until confirmation of progressive disease
CNS=central nervous system; ECOG=Eastern Cooperative Oncology Group; PD-L1=programmed death ligand 1; R=randomized; TNBC=triple-negative breast cancer

KEYNOTE 355 – Study Population allocation



Rugo et al, ESMO 2021

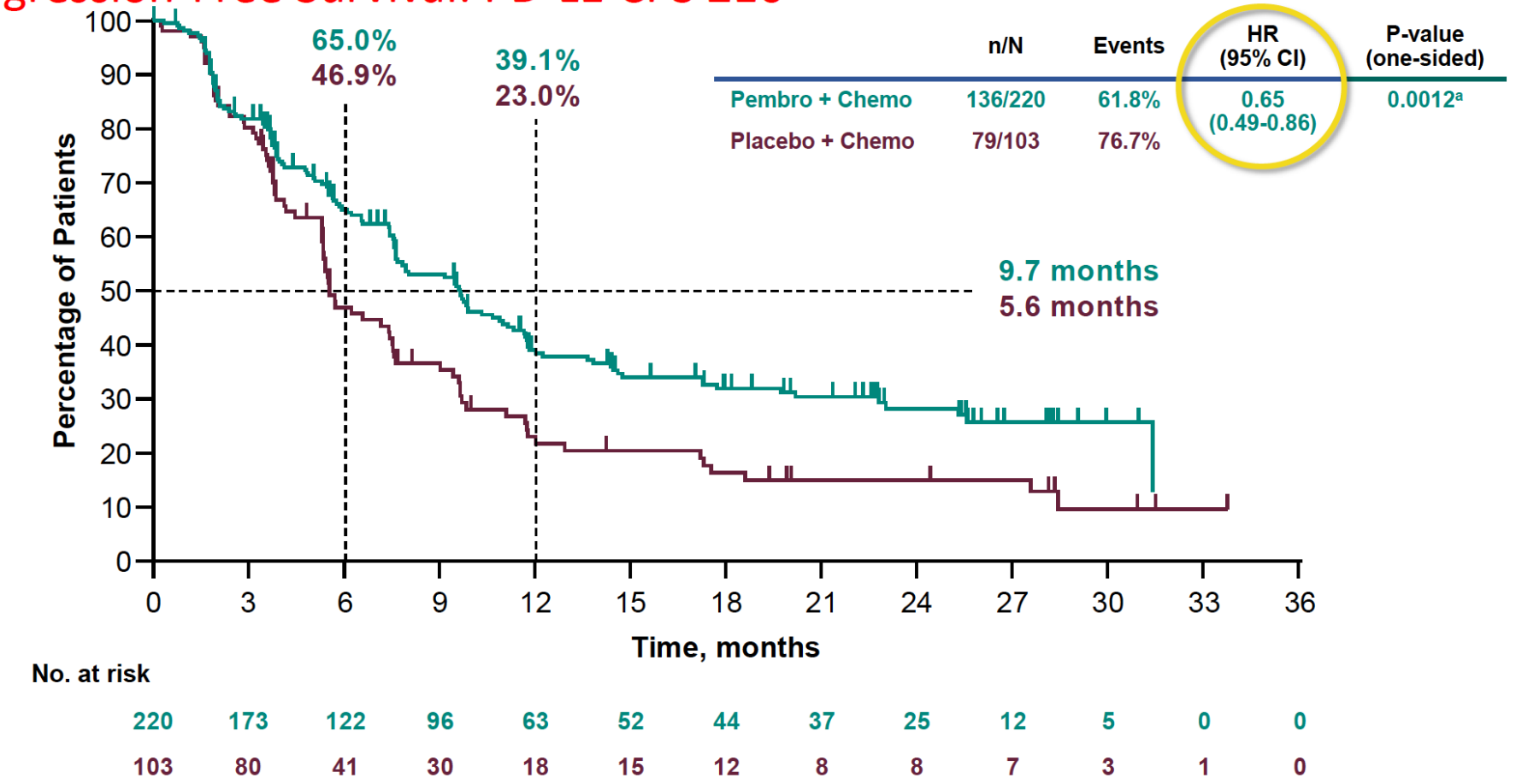
KEYNOTE 355 – Study Population allocation

Characteristic, n (%)	All Subjects, N = 847	
	Pembro + Chemo N = 566	Placebo + Chemo N = 281
Age, median (range), yrs	53 (25-85)	53 (22-77)
ECOG PS 1	232 (41.0)	108 (38.4)
PD-L1–positive CPS ≥1	425 (75.1)	211 (75.1)
PD-L1–positive CPS ≥10	220 (38.9)	103 (36.7)
Chemotherapy on study		
Taxane	255 (45.1)	127 (45.2)
Gemcitabine/Carboplatin	311 (54.9)	154 (54.8)
Prior same-class chemotherapy		
Yes	124 (21.9)	62 (22.1)
No	442 (78.1)	219 (77.9)
Disease-free interval		
de novo metastasis	168 (29.7)	84 (29.9)
<12 months	125 (22.1)	50 (17.8)
≥12 months	270 (47.7)	147 (52.3)

Rugo et al, ESMO 2021

KEYNOTE 355 - Outcomes

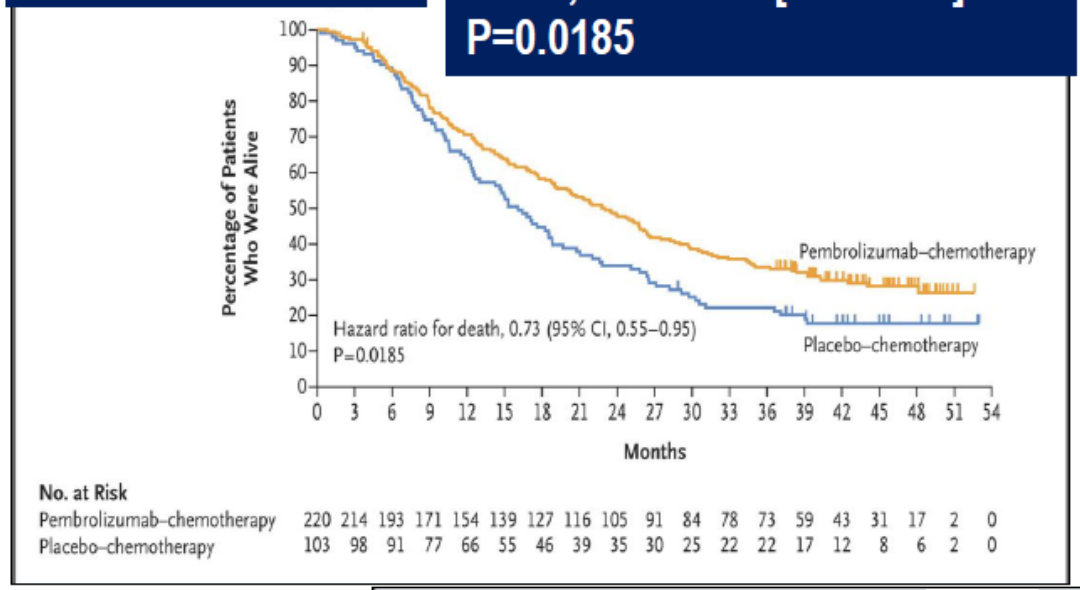
Progression-Free Survival: PD-L1 CPS ≥10



Presented By Javier Cortes at TBD

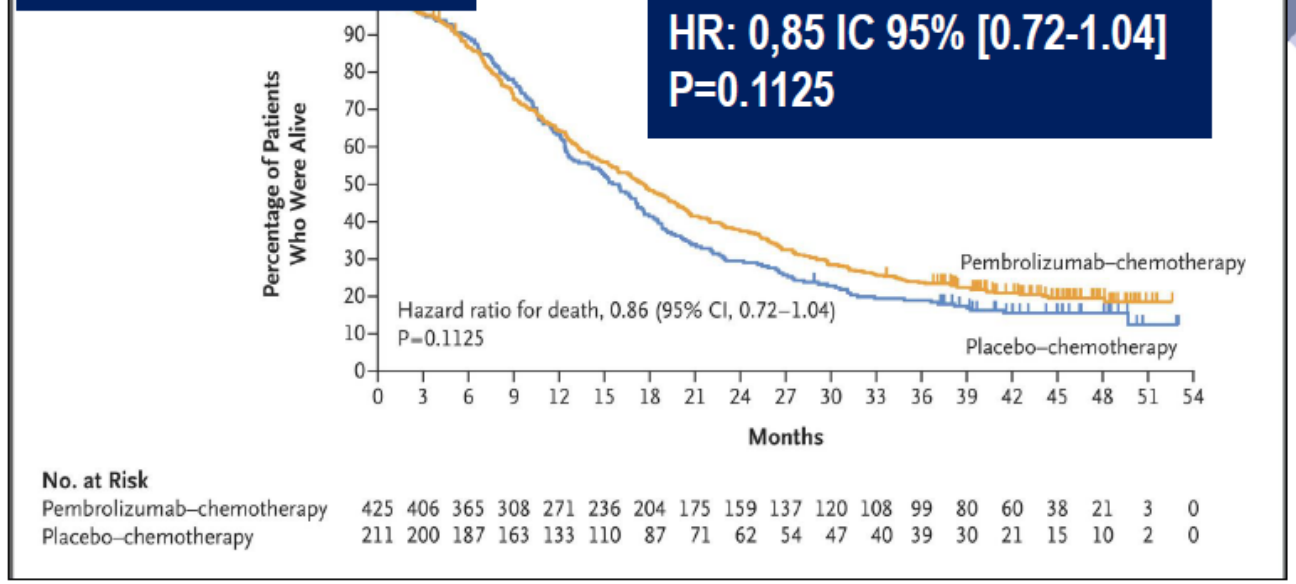
CPS-10 Subgroup

OS: 23 vs 16.1 months
HR: 0,73 IC 95% [0.55-0.95]
P=0.0185



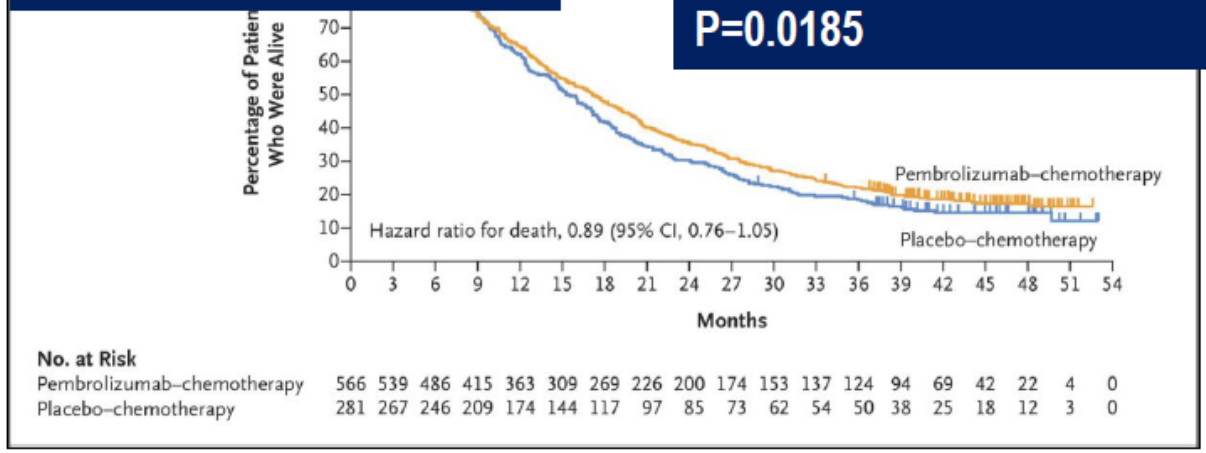
CPS-1 Subgroup

OS: 17.6 vs 16 months
HR: 0,85 IC 95% [0.72-1.04]
P=0.1125



Intention to treat Population

OS: 17.2 vs 15.5 months
HR: 0,789 IC 95% [0.76-1.05]
P=0.0185



[Cortes et al, 2022]

Content of this presentation is copyright and responsibility of the author. Permission is required for re-use.

IMMUNOTHERAPY

PEMBROLIZUMAB

KEYNOTE 355
(First line treatment with Pembrolizumab-CT in advanced and mTNBC)

ATEZOLIZUMAB

IM PASSION 130
(First line treatment with Atezoluzimab-Nab Paclitaxel in mTNBC)

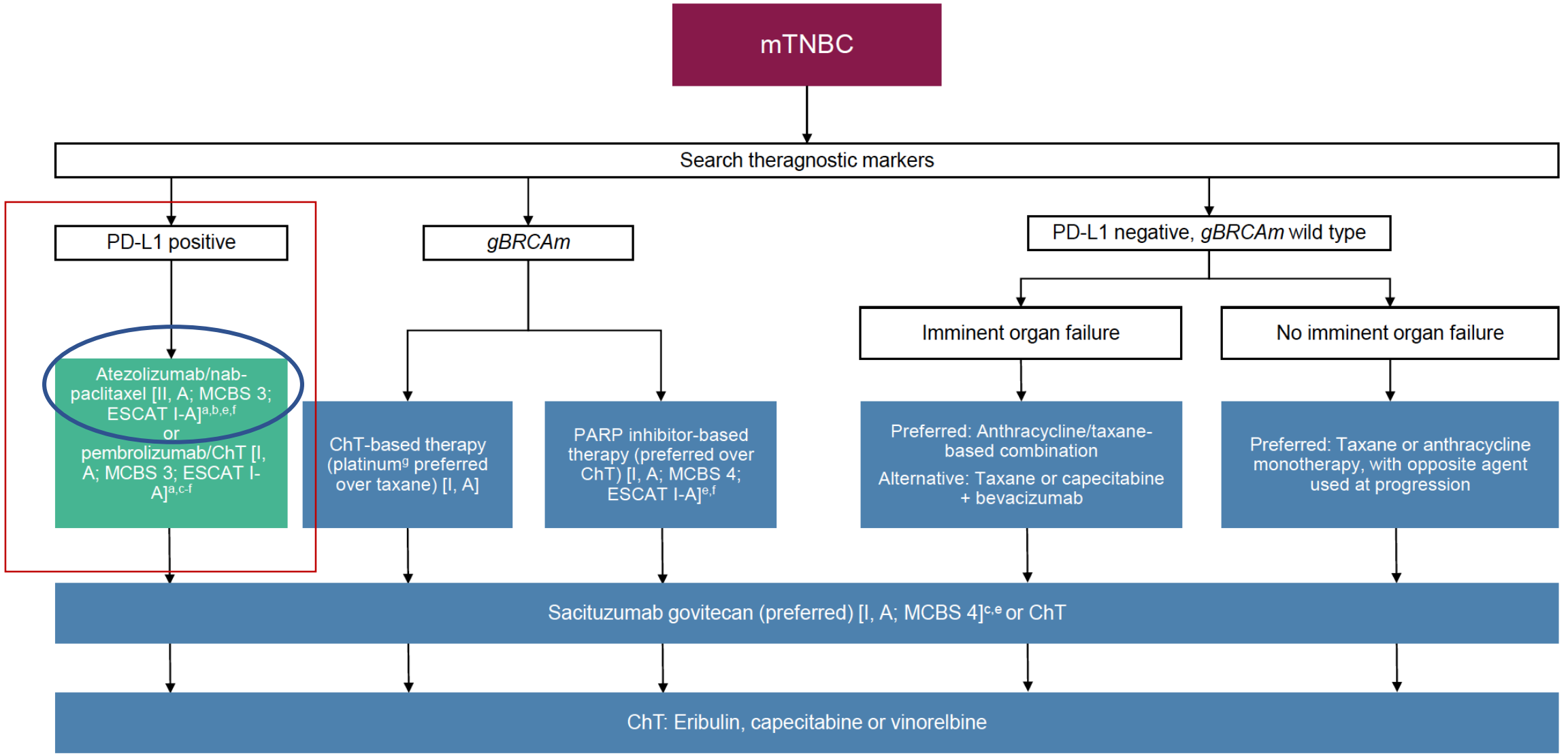
Content of this presentation is copyright and responsibility of the author. Permission is

Agenda

- **Quali evidenze dalla letteratura?**

- **Quali indicazioni per la pratica clinica?**

METASTATIC BREAST CANCER - TNBC



Gennari et al, Annals of Onc 2021

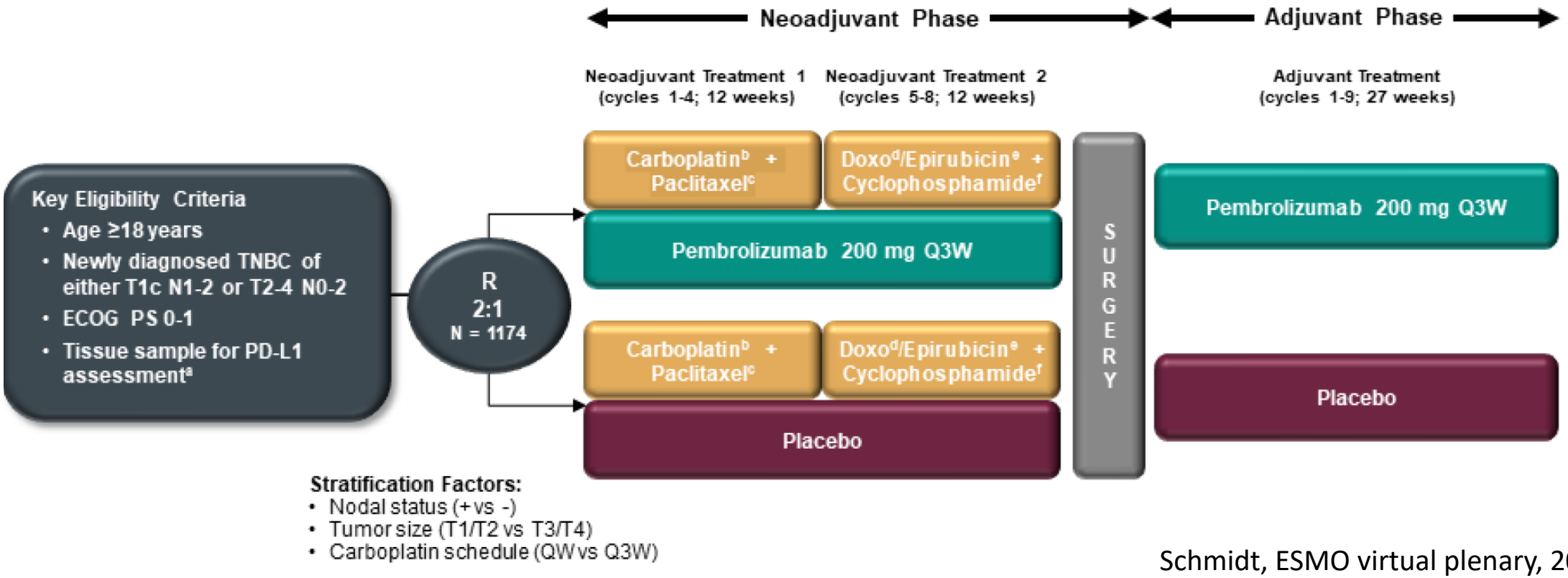
Gazzetta ufficiale

Tecentriq in associazione con nab-paclitaxel è indicato per il trattamento di pazienti adulti con TNBC non resecabile localmente avanzato o metastatico, i cui tumori presentano un’espressione di PD-L1 ≥ 1% e che non sono stati sottoposti a precedente chemioterapia per malattia metastatica.

AGENZIA ITALIANA DEL FARMACO

- Immunoterapia nel tumore mammario stadio precoce (triplo negativo)

KEYNOTE 522 – Study DESIGN

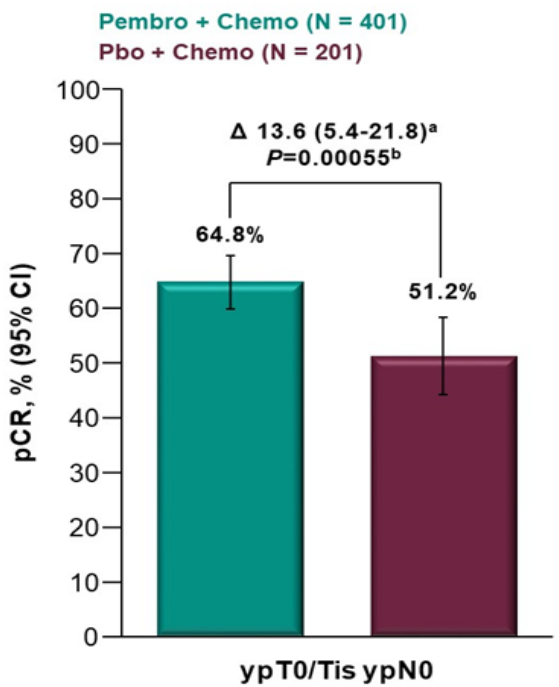


Schmidt, ESMO virtual plenary, 2021

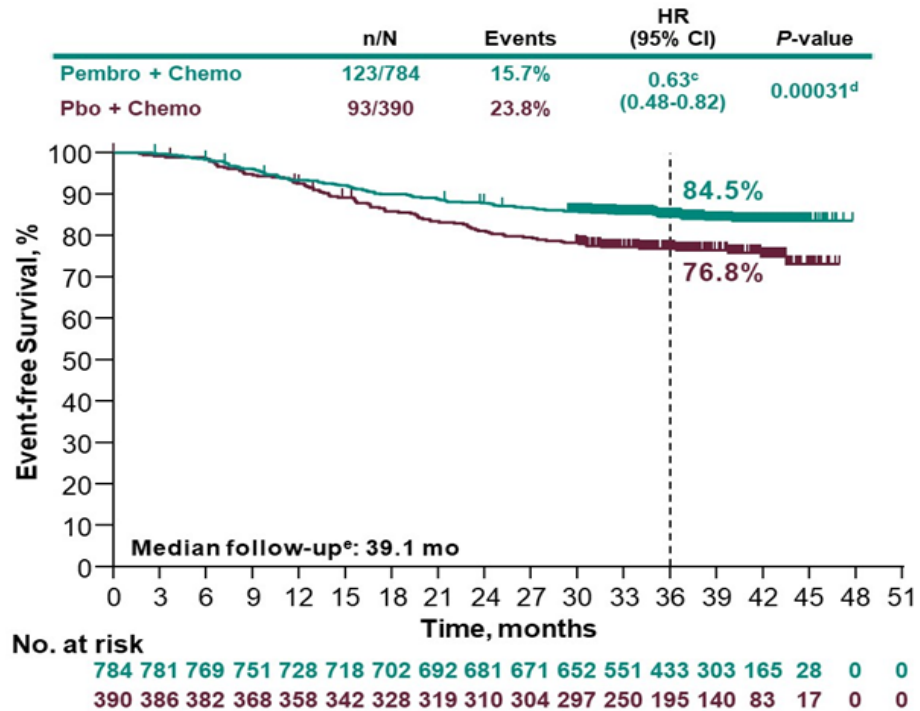
No T1a-T1b; No T1cN0; No T4d (inflammatory)

Primary Analyses of KEYNOTE-522

pCR at IA1[1]



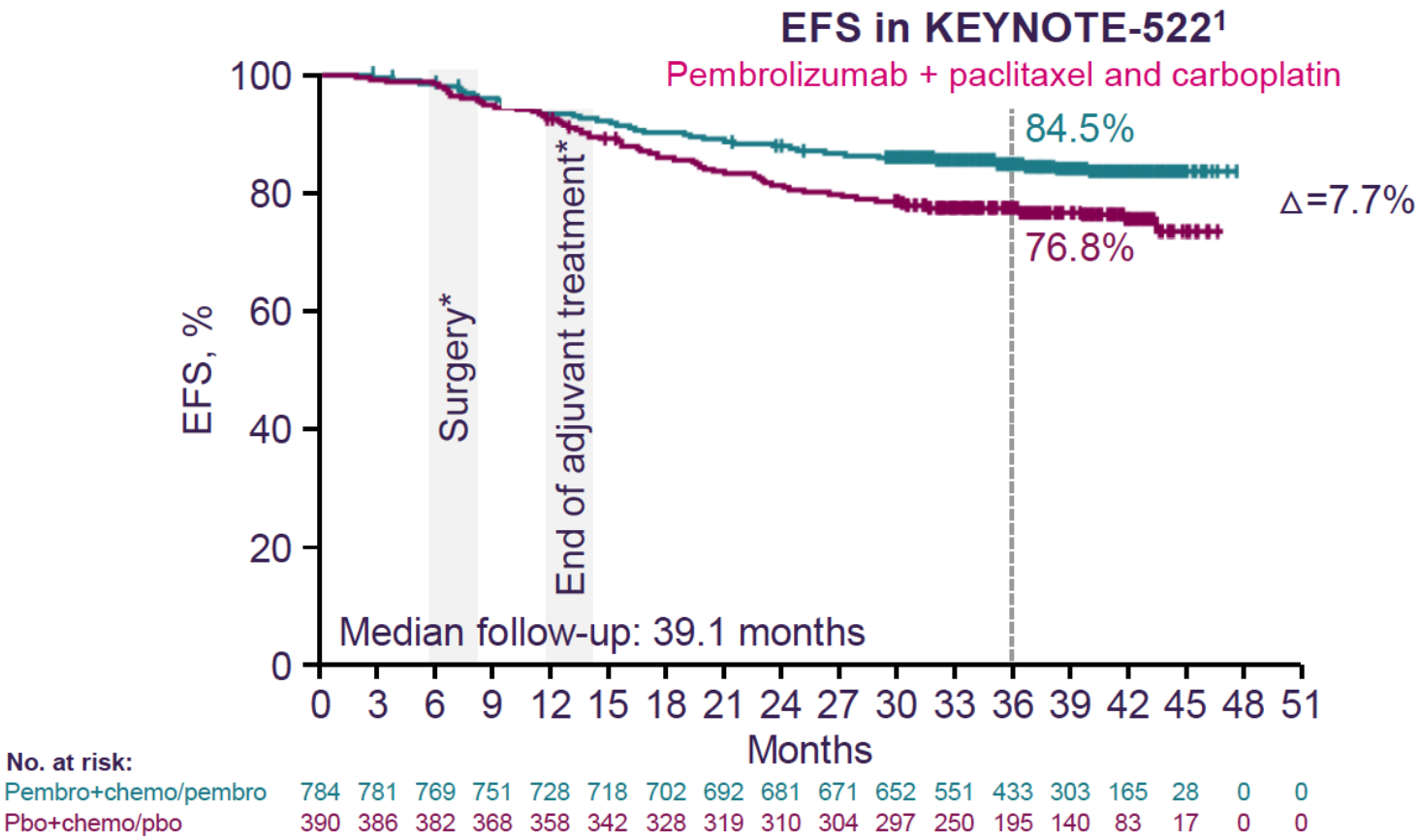
EFS at IA4[2]



1. Schmid P, et al. *N Engl J Med* 2020;382:810-21. 2. Schmid P, et al. *N Engl J Med* 2022;386:556-67. [a]Estimated treatment difference based on Miettinen & Nurminen method stratified by randomization stratification factors. [b]Prespecified *P*-value boundary for significance of 0.003 was crossed; data cutoff date: September 24, 2018. [c]Hazard ratio (CI) analyzed based on a Cox regression model with treatment as a covariate stratified by the randomization stratification factors. [d]Prespecified *P*-value boundary of 0.00517 was crossed. [e]Defined as the time from randomization to the data cutoff date of March 23, 2021.

Content of this presentation is the property of the author, licensed by ASCO. Permission required for reuse.

IO in EARLY TNBC – EFS benefit

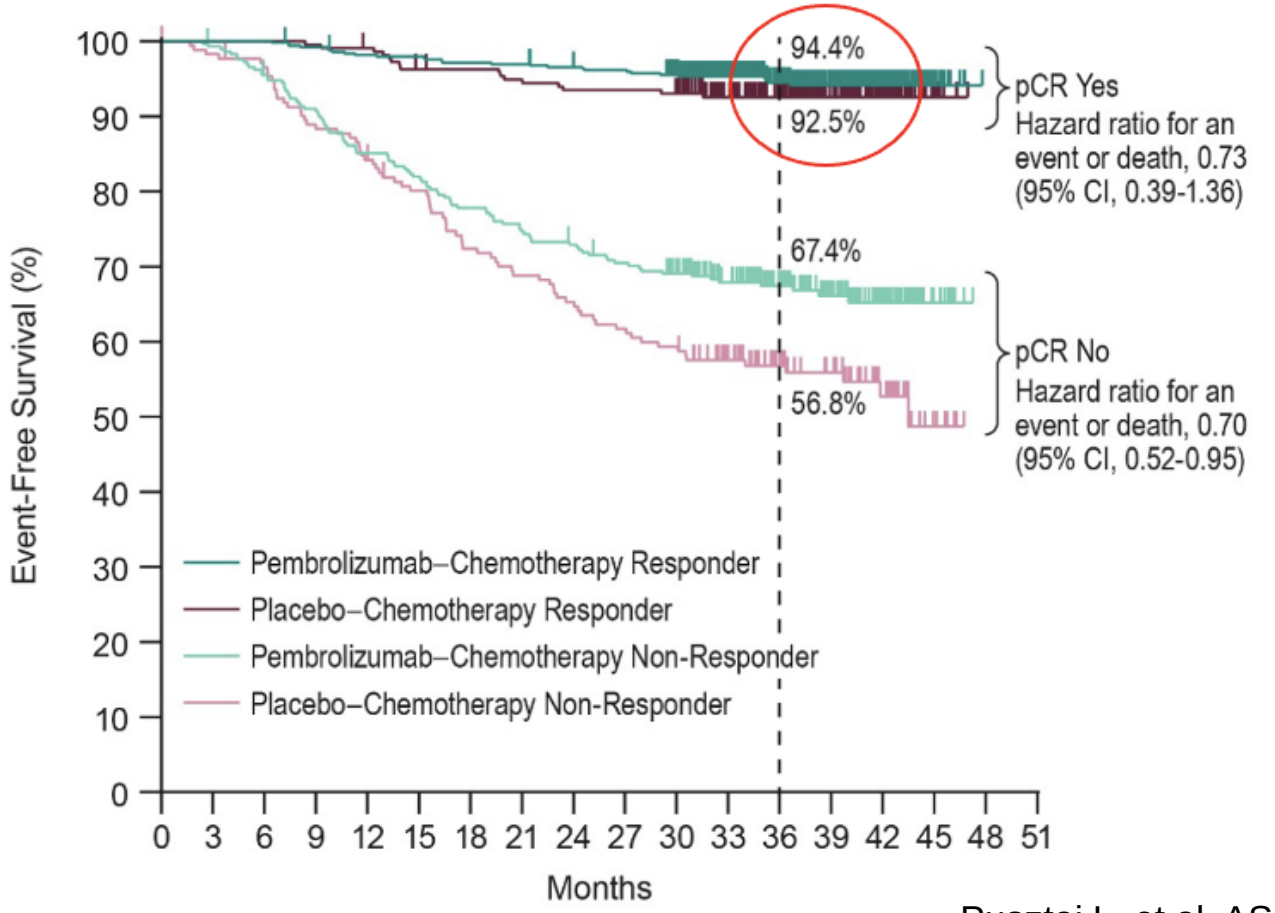


	Pembrolizumab + chemotherapy / pembrolizumab (n=784)	Placebo + chemotherapy / placebo (n=390)
Events	15.7%	23.8%
	Hazard ratio **0.63**[†] (95% CI 0.48–0.82) p=0.00031[‡]	

Schmid et al. N Engl J Med 2022

FDA and EMA granted Pembrolizumab approval for high-risk, early-stage TNBC

EFS and pCR

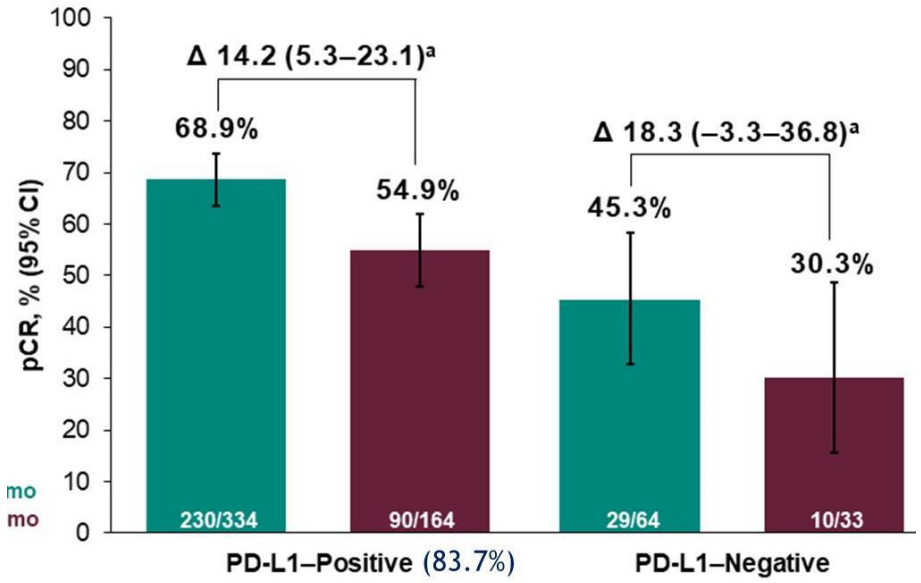


Pusztai L, et al. ASCO 2022

1 - WHO IS A CANDIDATE FOR IMMUNOTHERAPY?

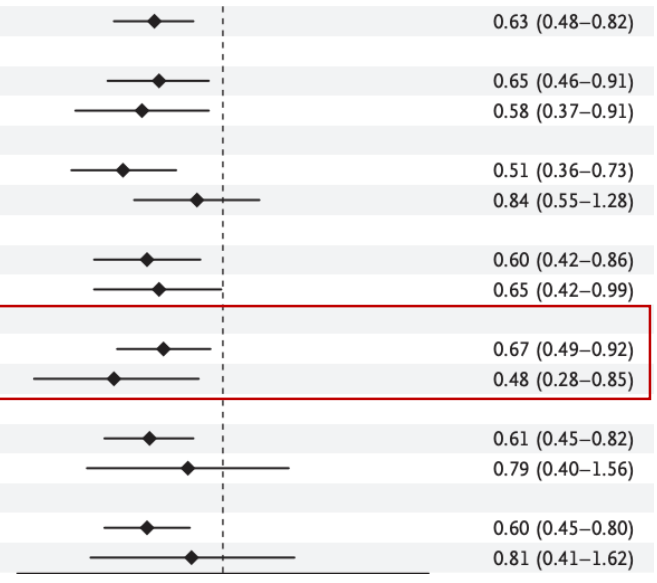
- T stage
- N stage
- PD-L1 status

pCR by PD-L1 status



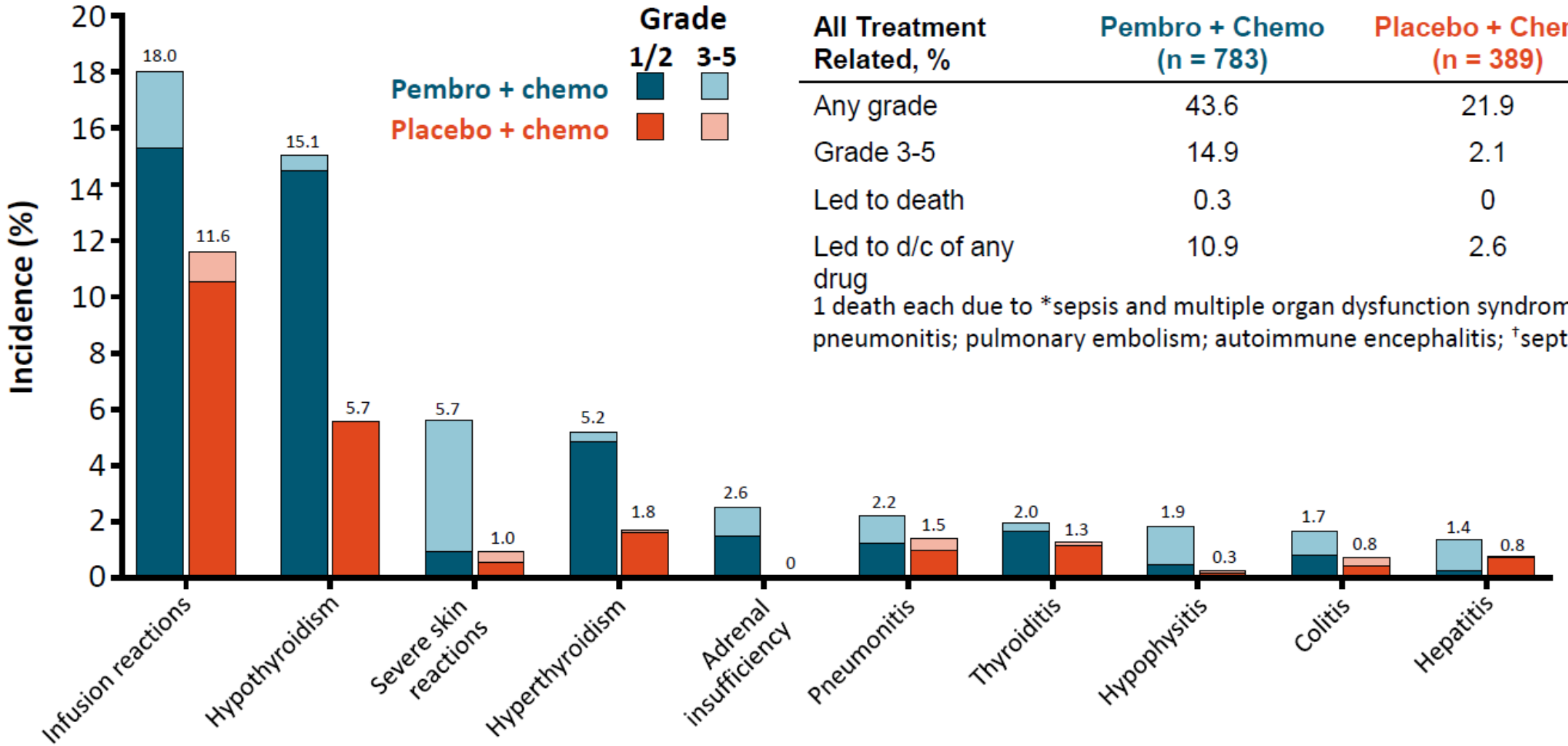
EFS by PD-L1 status

Subgroup	Pembrolizumab–Chemotherapy	Placebo–Chemotherapy	Hazard Ratio for Event or Death (95% CI)
	no. of patients with event/total no. (%)		
Overall	123/784 (15.7)	93/390 (23.8)	0.63 (0.48–0.82)
Nodal status			
Positive	80/408 (19.6)	57/196 (29.1)	0.65 (0.46–0.91)
Negative	43/376 (11.4)	36/194 (18.6)	0.58 (0.37–0.91)
Tumor size			
T1 to T2	64/581 (11.0)	59/290 (20.3)	0.51 (0.36–0.73)
T3 to T4	59/203 (29.1)	34/100 (34.0)	0.84 (0.55–1.28)
Carboplatin schedule			
Weekly	71/444 (16.0)	56/220 (25.5)	0.60 (0.42–0.86)
Every 3 wk	50/334 (15.0)	37/167 (22.2)	0.65 (0.42–0.99)
PD-L1 status			
Positive	98/656 (14.9)	68/317 (21.5)	0.67 (0.49–0.92)
Negative	25/128 (19.5)	25/69 (36)	0.48 (0.28–0.85)
Age			
<65 yr	103/700 (14.7)	79/342 (23.1)	0.61 (0.45–0.82)
≥65 yr	20/84 (24)	14/48 (29)	0.79 (0.40–1.56)
ECOG performance-status score			
0	101/678 (14.9)	80/341 (23.5)	0.60 (0.45–0.80)
1	22/106 (20.8)	13/49 (27)	0.81 (0.41–1.62)



PD-L1 status does not predict IO benefit in eTNBC

KEYNOTE-522: Immune-Related Adverse Events



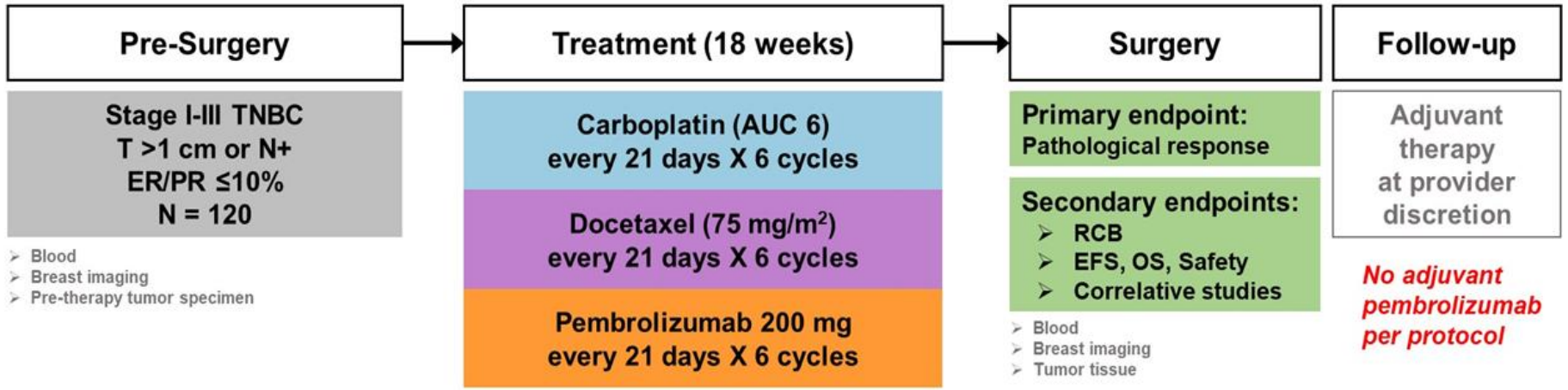
All Treatment Related, %	Pembro + Chemo (n = 783)	Placebo + Chemo (n = 389)
Any grade	43.6	21.9
Grade 3-5	14.9	2.1
Led to death	0.3	0
Led to d/c of any drug	10.9	2.6

1 death each due to *sepsis and multiple organ dysfunction syndrome; pneumonitis; pulmonary embolism; autoimmune encephalitis; †septic shock.

Schmid. ESMO 2021. Abstr VP7_2021.

Immune-Mediated AEs and Infusion Reactions With Incidence ≥10 Patients

Neoadjuvant Phase II Study of Pembrolizumab and Carboplatin plus Docetaxel in Triple Negative Breast Cancer (NeoPACT)



Sites: University of Kansas and Baylor University Medical Center

NCI Designated Cancer Center | NCI Community Oncology Research Program

THE UNIVERSITY OF KANSAS CANCER CENTER

2022 ASCO ANNUAL MEETING | #ASCO22

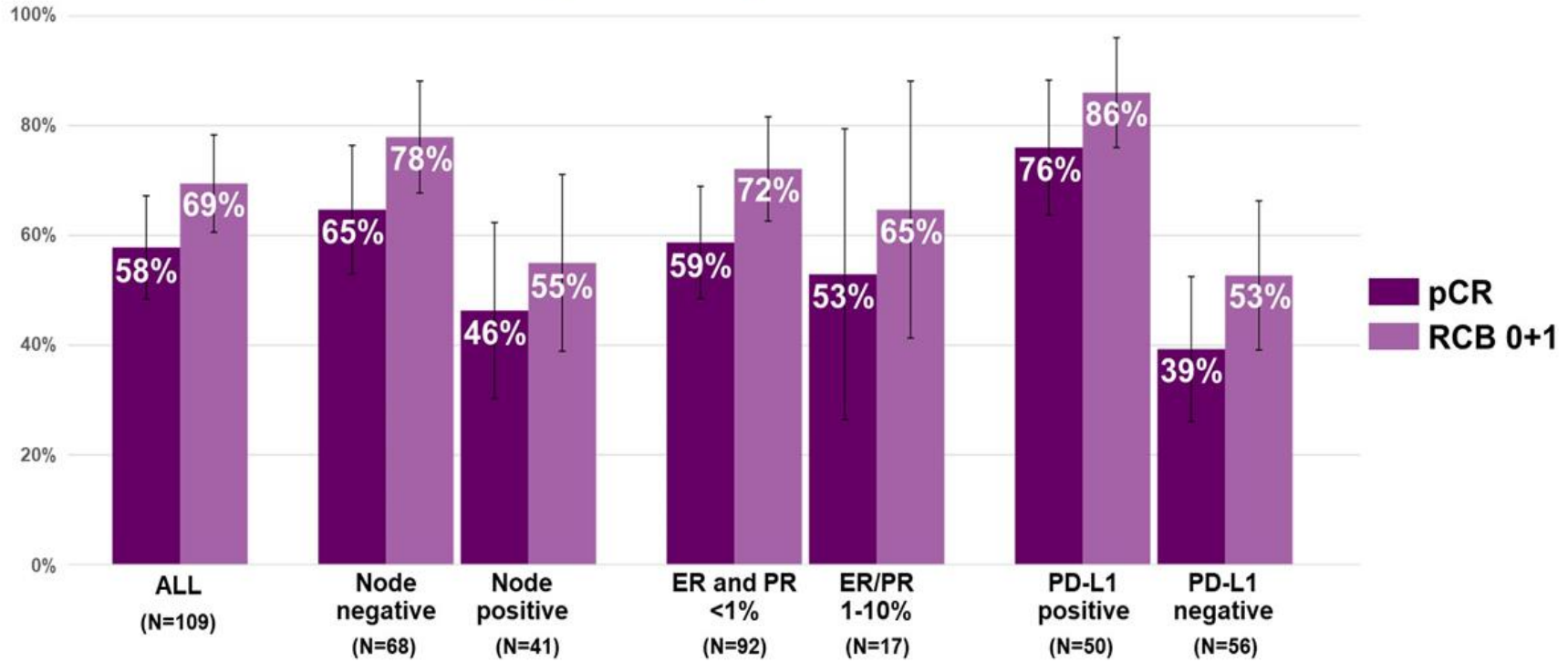
PRESENTED BY:
Priyanka Sharma, M.D.

Content of this presentation is the property of the author, licensed by ASCO. Permission required for reuse.

ASCO AMERICAN SOCIETY OF CLINICAL ONCOLOGY
KNOWLEDGE CONQUERS CANCER

Content of this presentation is the property of the author, licensed by ASCO. Permission required for reuse.

RESULTS: Pathologic response



- No patients had disease progression during neoadjuvant treatment.
- Among patients with stage II-III disease and ER & PR IHC <1%, pCR and RCB 0+1 rates were 59% and 69%, respectively.
- pCR in TNM stage I, II, and III disease was 69%, 59%, and 43%, respectively.

Error bars represent 95% binomial confidence intervals

PRESENTED BY:
Priyanka Sharma, M.D.

Content of this presentation is the property of the author, licensed by ASCO. Permission required for reuse.

ASCO AMERICAN SOCIETY OF CLINICAL ONCOLOGY
KNOWLEDGE CONQUERS CANCER

Content of this presentation is the property of the author, licensed by ASCO. Permission required for reuse.

Adverse events (AEs)

Grade 3 or higher treatment-related AEs were observed in 26.9% of patients.

- Most common grade 3 or higher treatment-related AEs were diarrhea (G3=4.3%, G4=0%), anemia (G3=3.5%, G4=0%), and peripheral sensory neuropathy (G3=2.6%, G4=0%).

Treatment discontinuation due to AEs:

- Treatment related AEs led to discontinuation of any trial drug in 12% of patients. Discontinuation of pembrolizumab and chemotherapy due to treatment related AE occurred in 7% and 10% of patients, respectively.

Treatment-related adverse event [a]	All grades (N=115)	Grade 1-2	Grade 3-4
Any adverse event	115 (100.0%)	84 (73.0%)	31 (26.9%)
Fatigue	87 (75.7%)	86 (74.8%)	1 (0.9%)
Diarrhea [b]	72 (62.6%)	67 (58.3%)	5 (4.3%)
Nausea	68 (59.1%)	66 (57.1%)	2 (1.7%)
Peripheral sensory neuropathy [c]	46 (40.0%)	43 (37.4%)	3 (2.6%)
Constipation	43 (37.4%)	43 (37.4%)	0 (0%)
Dysgeusia	40 (34.8%)	40 (34.8%)	0 (0%)
Alopecia	39 (33.9%)	39 (33.9%)	0 (0%)
Mucositis oral	39 (33.9%)	39 (33.9%)	0 (0%)
Arthralgia	32 (27.8%)	32 (27.8%)	0 (0%)
Watering eyes	27 (23.5%)	27 (23.5%)	0 (0%)
Rash	27 (23.5%)	26 (22.6%)	1 (0.9%)
Edema limbs	26 (22.6%)	26 (22.6%)	0 (0%)
Anorexia	25 (21.7%)	25 (21.7%)	0 (0%)
Myalgia	24 (20.9%)	24 (20.9%)	0 (0%)
Anemia	20 (17.4%)	16 (12.2%)	4 (3.5%)
Bone pain	20 (17.4%)	20 (17.4%)	0 (0%)
Nail discoloration	19 (16.5%)	19 (16.5%)	0 (0%)
Insomnia	18 (15.7%)	18 (15.7%)	0 (0%)
Headache	16 (13.9%)	16 (13.9%)	0 (0%)
Hot flashes	15 (13.0%)	14 (12.2%)	1 (0.9%)
Abdominal pain	14 (12.2%)	14 (12.2%)	0 (0%)
Dyspnea	13 (11.3%)	13 (11.3%)	0 (0%)
Fever	13 (11.3%)	12 (10.4%)	1 (0.9%)
Hypomagnesemia	13 (11.3%)	12 (10.4%)	1 (0.9%)
Dehydration	12 (10.4%)	10 (8.7%)	2 (1.7%)
Vomiting	11 (9.6%)	11 (9.6%)	0 (0%)

[a] Treatment-related AEs that occurred in at least 10% of patients are reported.
[b] Grade 1=40.0%, Grade 2=18.3%, Grade 3=4.3%, Grade 4=0%.
[c] Peripheral sensory neuropathy was mainly grade 1 (26.9%), with 10.4% and 2.6% of patients experiencing grade 2 and 3 peripheral neuropathy, respectively (Grade 4=0%).

Content of this presentation is the property of the author, licensed by ASCO. Permission required for reuse.
ASCO AMERICAN SOCIETY OF CLINICAL ONCOLOGY KNOWLEDGE CONQUERS CANCER

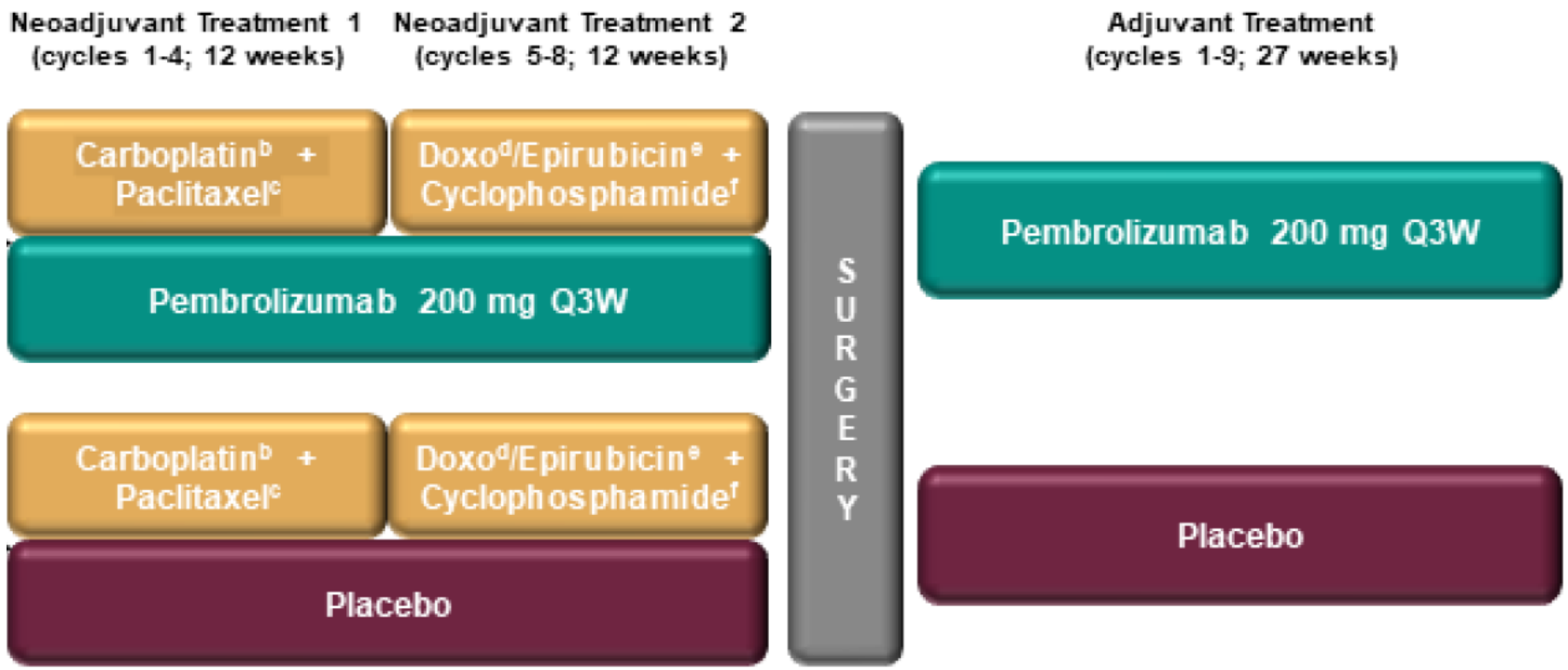
Content of this presentation is the property of the author, licensed by ASCO. Permission required for reuse.

Agenda

- **Quali evidenze dalla letteratura?**

- **Quali indicazioni per la pratica clinica?**

TNBC candidato a terapia preoperatoria: applicabilità nella pratica clinica



Richiesta di Pembrolizumab **ad uso compassionevole**

- ELENCO DOCUMENTI
- 1. Domanda di autorizzazione sottoscritta dal Direttore dell'Unità Operativa e dal Medico Responsabile del trattamento del Paziente;
- 2. Modulo di Assunzione di Responsabilità – Uso compassionevole ;
- 3. Letteratura a supporto
- 4. Protocollo di trattamento, comprensivo delle modalità d'impiego del farmaco (V2_17032022)
- 5. Foglio informativo e consenso informato (versione n°1 del 16.02.2022)
- 6. Lettera informativa per il Medico Curante (versione n°1 del 12.04.2022)
- 7. Dichiarazione della fornitura gratuita del farmaco da parte dell'impresa autorizzata, con l'identificazione della tipologia applicabile, tra quelle previste nel Modello regionale (26/09/2022);
- 8) Relazione clinica del Paziente, con l'indicazione delle motivazioni che hanno portato alla richiesta, e ove URGENTE specificando il motivo del carattere di urgenza;
- 9 Investigator's Brochure del medicinale oggetto della richiesta, nell'ultima versione disponibile (ED 21 02/09/2021);
- 10) Documentazione attestante la produzione del medicinale secondo GMP in accordo alla normativa nazionale e comunitaria;

- E l’immunoterapia nelle altre tipologie di tumore mammario?

- Qualche dato…

PANACEA trial: NCT02129556

Pharma Partner: Merck

Phase Ib/II trial of anti-PD-1 monoclonal ANtibody in AdvanCed, Trastuzumab-resistant, HER2-positive breast cAncer

Pembrolizumab + trastuzumab in pretreated patients

	PD-L1-negative, phase 2 (n=12)	PD-L1-positive, phase Ib (n=6)	PD-L1-positive, phase 2 (n=40)	All PD-L1-positive patients, phase 1b–2 (n=46)
Objective response	0 (0%; 0–18)	1 (17%; 1–58)	6 (15%; 7–29)	7 (15%; 7–27)
Disease control*	0 (0%; 0–18)	1 (17%; 1–58)	10 (25%; 14–39)	11 (24%; 14–36)
Best overall response				
Complete response	0	1 (17%)	1 (3%)	2 (4%)
Partial response	0	0	5 (13%)	5 (11%)
Stable disease	2 (17%)	0	7 (18%)	7 (15%)
Progressive disease	9 (75%)	5 (83%)	25 (63%)	30 (65%)
Not evaluable	1 (8%)	0	2 (5%)	2 (4%)

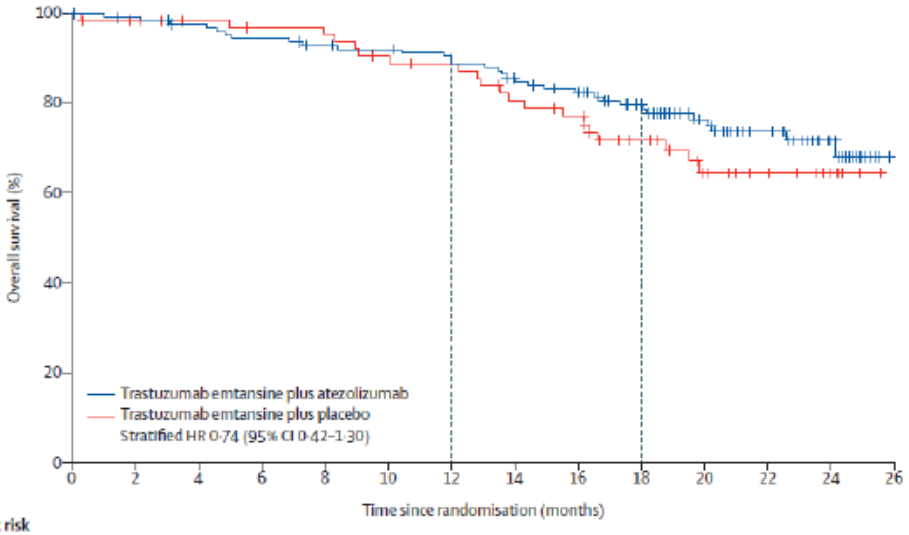
Data are n (%; 90% CI), or n (%). Objective responses were confirmed by repeat imaging 4–6 weeks later.
PD-L1=programmed cell death 1 ligand 1. *Includes patients who achieved an objective response or had stable disease as their best response for 24 weeks or more.

Table 3: **Best response, by PD-L1 status**

Loi S, Lancet Oncol

Combination with 1st generation ADC (TDM1)

OS



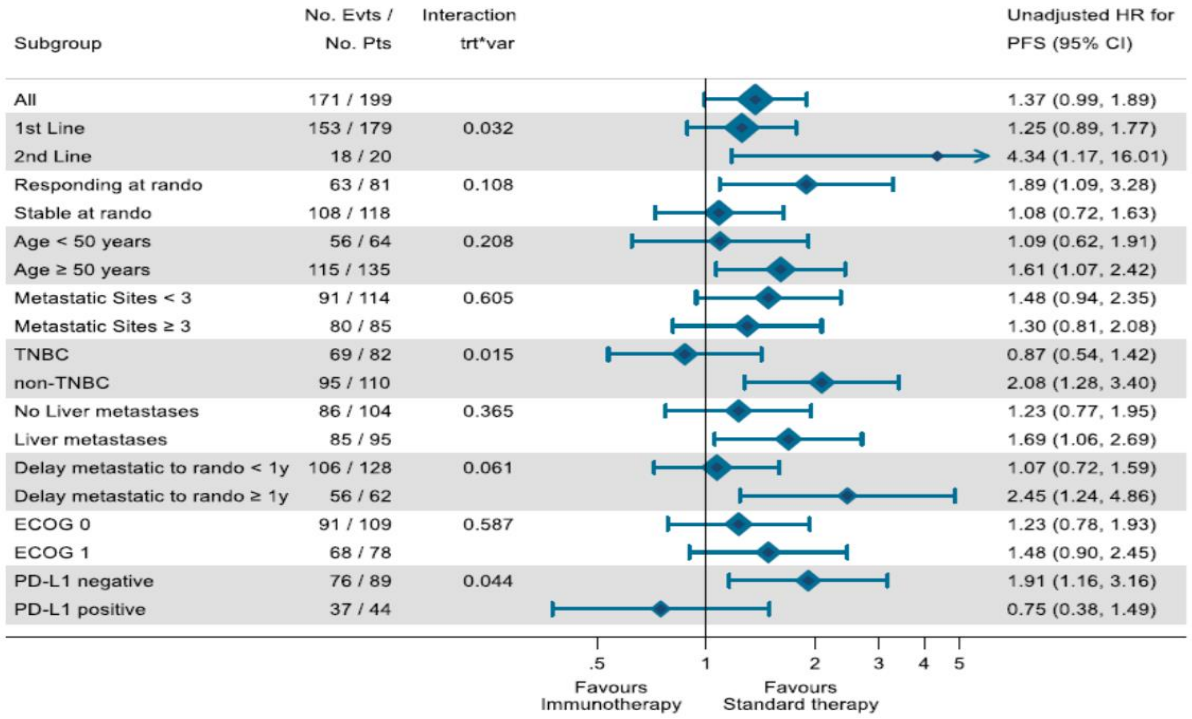
Number at risk (number censored)													
Trastuzumab emtansine plus atezolizumab	133 (0)	130 (2)	126 (4)	122 (4)	118 (6)	116 (7)	111 (8)	104 (10)	98 (13)	78 (30)	56 (49)	42 (61)	21 (81)
Trastuzumab emtansine plus placebo	69 (0)	66 (2)	63 (5)	61 (6)	60 (6)	55 (7)	54 (8)	48 (9)	45 (10)	35 (17)	23 (26)	14 (35)	8 (41)

Trastuzumab emtansine plus atezolizumab versus trastuzumab emtansine plus placebo in previously treated, HER2-positive advanced breast cancer (KATE2): a phase 2, multicentre, randomised, double-blind trial

Addition of atezolizumab to trastuzumab emtansine did not show a clinically meaningful improvement in progression-free survival and was associated with more adverse events.

Emens Lancet Oncol 2020

Durvalumab compared to maintenance chemotherapy in metastatic breast cancer:
the randomized phase II **SAFIR02-BREAST IMMUNO** trial



Bachelot Nat Med 2021

Conclusioni

- Immunoterapia non indicata per tutti i tumori mammari

- Vantaggio in sopravvivenza nei pazienti con tumore mammario TN PDL1 positivo
- Aumento della probabilità di pCR e migliore EFS nei tumori mammari TN stadio iniziale indipendentemnte dall'espressione di PDL1

- Domande sull'utilizzo dell'immunoterapia in pazienti suscettibili anche ad altre terapia (es capecitabina? Olaparib?)

- GRAZIE MILLE!!!!