Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Österreichische Gesellschaft für Krankenhauspharmazie
Herbstmeeting 2019

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Disease Area Specialist Immuno-Oncolgoy

Bristol-Myers Squibb

1506AT19NP01883-01 10/2019

Was sind Immunonkologische Highlights & Ausblick?

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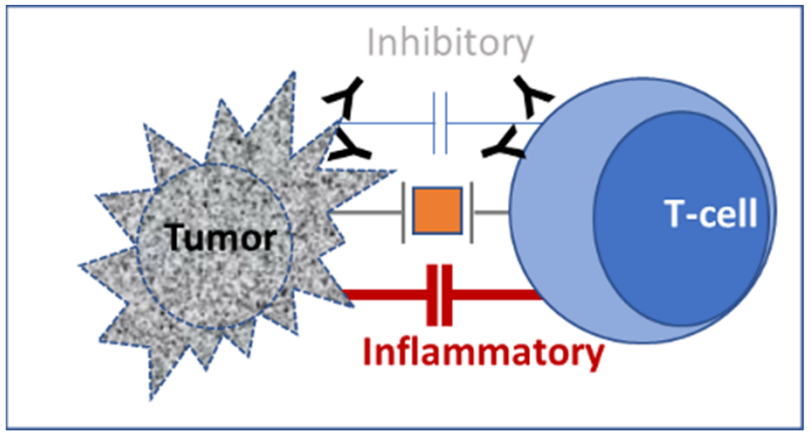
Was sind Immunonkologische Highlights & Ausblick?

- Beschränkung auf Checkpoint-Inhibitoren



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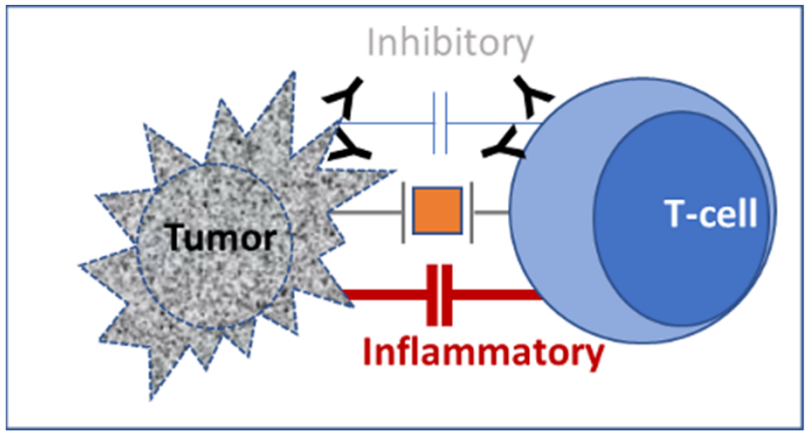
Was sind Immunonkologische Highlights & Ausblick?

- Beschränkung auf Checkpoint-Inhibitoren
- EMA Zulassungen 2019



EUROPEAN MEDICINES AGENCY
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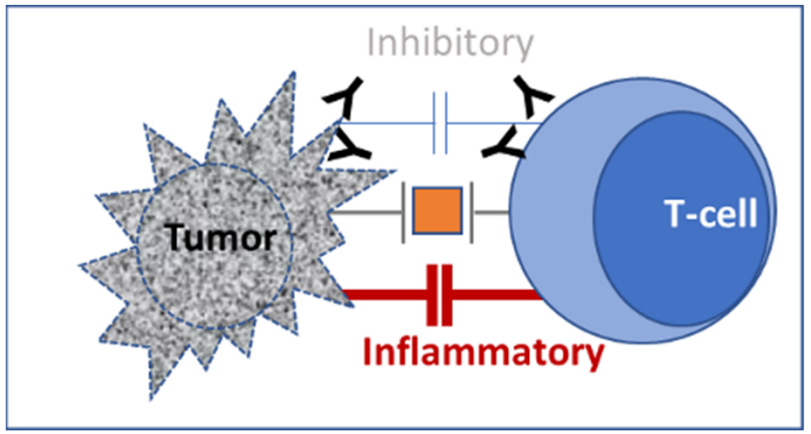
Was sind Immunonkologische Highlights & Ausblick?

- Beschränkung auf Checkpoint-Inhibitoren
- EMA Zulassungen 2019
- Positive Phase III Studien 2019 › Potenzielle EMA Zulassungen 2020



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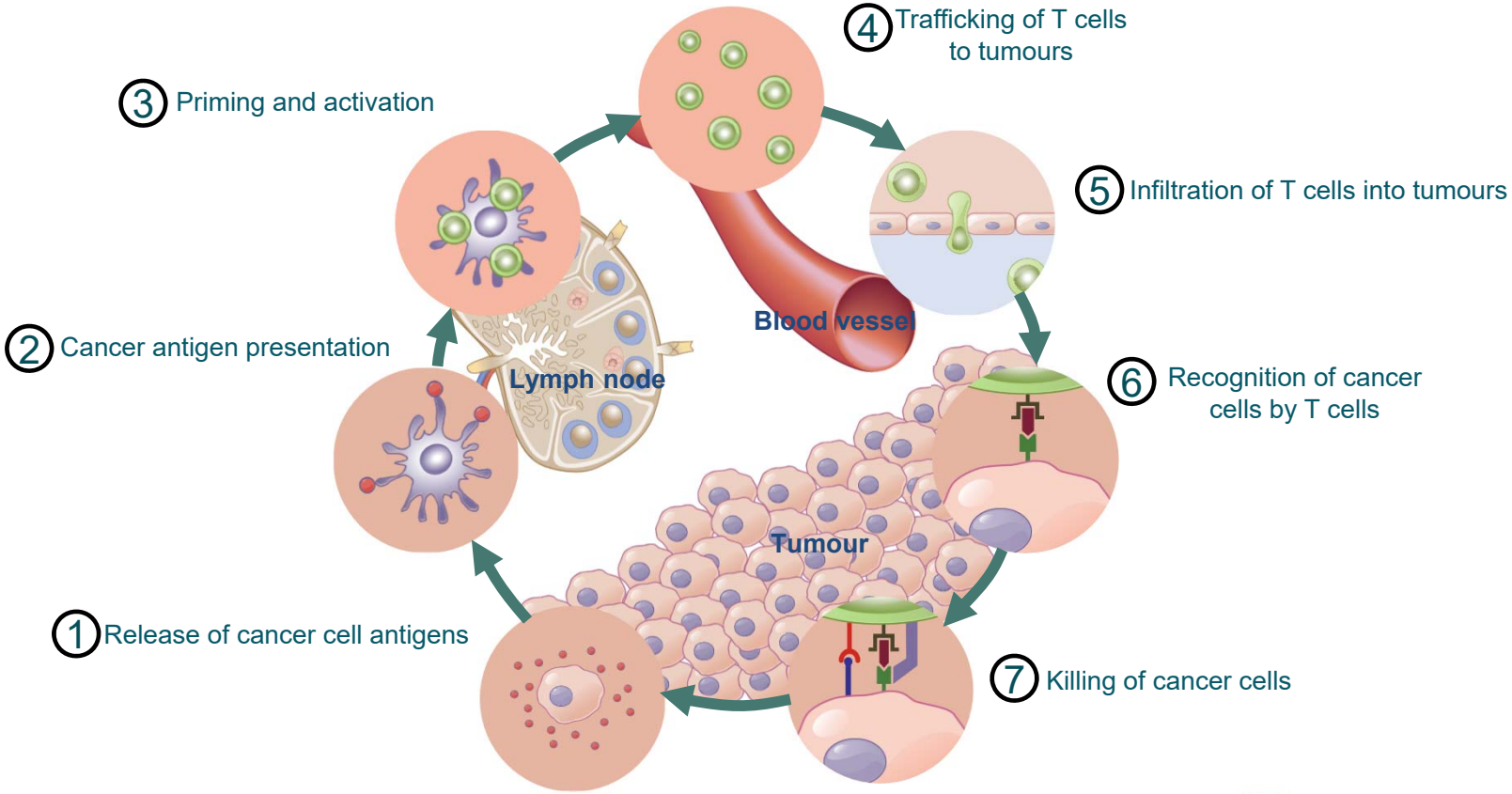
Immunonkologie: Tumor-Immunogenität



Chen DS, Mellman I. Immunity. 2013;39:1-10

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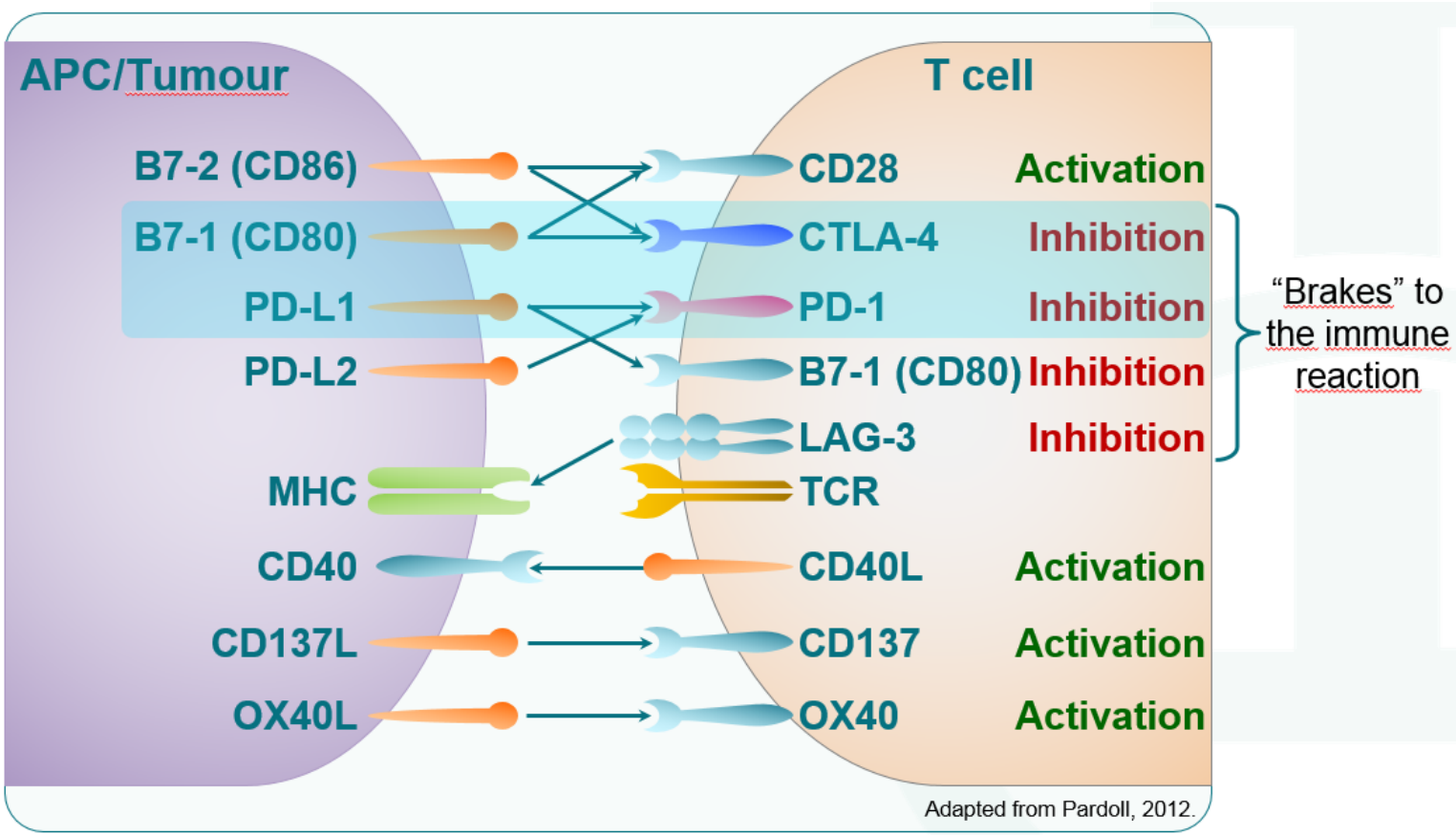
Immunonkologie: Checkpoint Pathways



APC, antigen-presenting cell; CTLA-4, cytotoxic T-lymphocyte antigen-4; LAG-3, lymphocyte activation gene-3; MHC, major histocompatibility complex; PD-1, programmed death-1; PD-L, programmed death ligand; TCR, T-cell receptor.

Pardoll DM. *Nat Rev Cancer*. 2012;12(4):252-264.

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EMA Zulassungsstatus Checkpoint-Inhibitoren

Wirkung	Substanz	Indikation(en)
CTLA-4	Ipililumab (Yervoy®)	• Malignes Melanom (nicht resektabel) +/- Nivolumab und adjuvant • Fortgeschrittenes Nierenzellkarzinom + Nivolumab (intermediäres oder ungünstiges Risikoprofil, 1. Linie)
PD-1	Nivolumab (Opdivo®)	• Malignes Melanom Stadium III (N+) oder Stadium IV +/- Ipilimumab • NSCLC (nicht resektabel, nach CHT) • RCC (nicht resektabel, 2. Linie) +/- Ipilimumab (nicht resektabel, 2. Linie Monotherapie oder (intermediäres oder ungünstiges Risikoprofil, 1. Linie Kombinationstherapie) • Morbus Hodgkin (nach ABSCT + Brentuximab) • Plattenepithel-Ca bei Kopf-Hals-Tumoren nach Cisplatin • Urothelkarzinom nach platinhältiger CHT
PD-1	Pembrolizumab (Keytruda®)	• Malignes Melanom (nicht resektabel) und adjuvant • NSCLC (nicht resektabel; 1. Linie: PD-L1 >50% oder CHT-Kombinationstherapie; 2. Linie nach CHT) • RCC (nicht resektabel: 1. Linie mit Axitinib) • Morbus Hodgkin (nach ABSCT + Brentuximab) • Plattenepithel-Ca bei Kopf-Hals-Tumoren nach Cisplatin (PD-L1 >50%) • Urothelkarzinom nach platin-hältiger CHT oder nicht geeignet für Platin
PD-L1	Atezolizumab (Tencentriq®)	• NSCLC (nicht resektabel; 2. Linie nach CHT; 1. Linie nsq mit CHT +/- Bevacizumab) • ES-SCLC (nicht resektabel; 1. Linie mit CHT) • TNBC (nicht resektabel, 1. Linie mit CHT bei PD-L1 ≥ 1% • Urothelkarzinom nach platinhältiger CHT oder nicht geeignet für Platin bei PD-L1 ≥ 5%
PD-L1	Avelumab (Bavencio®)	• Metastasiertes Merkelzellkarzinom nach CT
PD-L1	Durvalumab (Imfinzi®)	• NSCLC (nicht resektabel Stadium III nach RCT; PD-L1 >20%)
PD-1	Cemiplimab (Libtayo®)	• Fortgeschrittenes kutanes Plattenzellkarzinom

I-O Highlights 2019 betreffen Vielzahl Tumorentitäten

- Melanom
- Bronchuskarzinom
- Nierenzellkarzinom
- Urothelkarzinom
- Kopf-Hals-Tumoren
- Brustkrebs
- Magenkrebs
- Speisenröhrenkrebs
- Hepatozelluläres Karzinom
- Kutanes Plattenzellkarzinom

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Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Bronchuskarzinom
NSCLC

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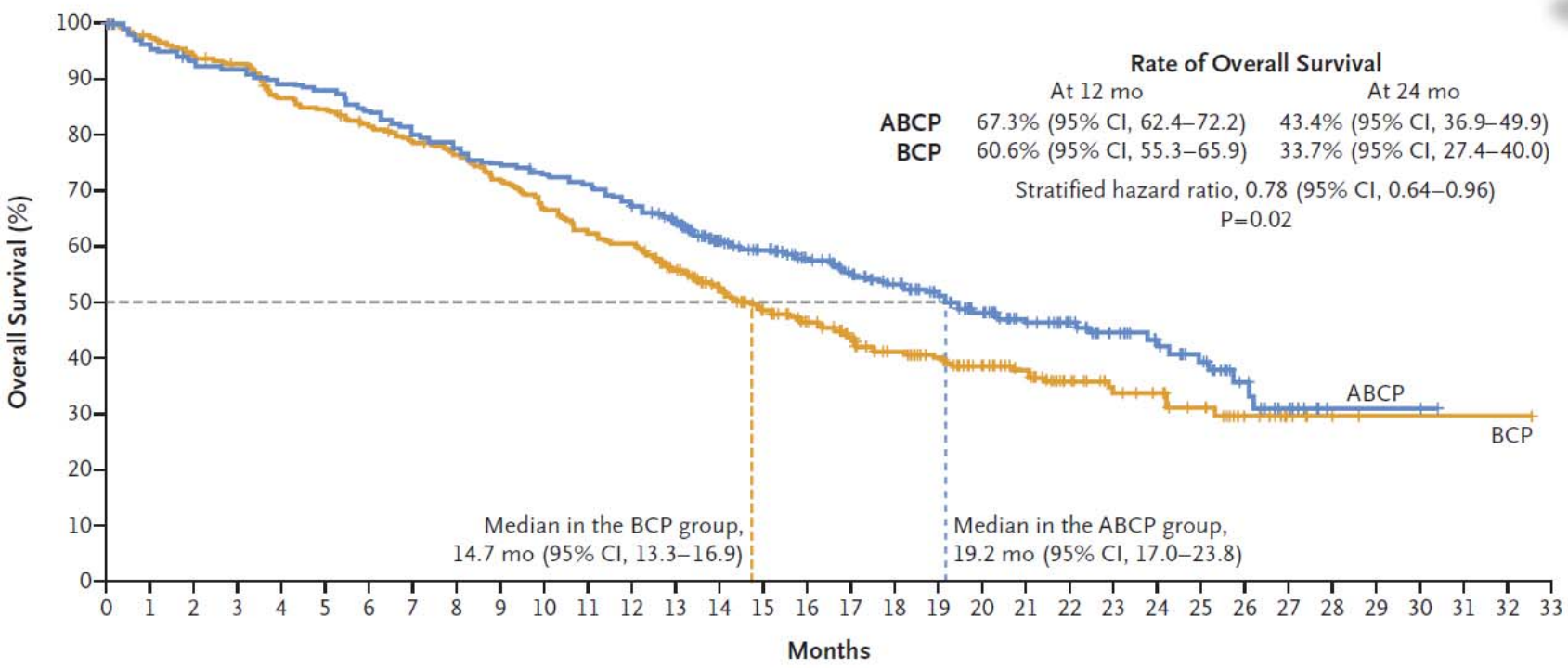
1L NSCLC, Adenokarzinom, Impower-150, Overall Survival

EMA Zulassung
08. März 2019



No. at Risk

ABCP	359	339	328	323	314	310	296	284	273	264	256	250	235	218	188	167	147	133	119	103	84	66	57	41	34	28	16	9	2	2	2
BCP	337	326	315	308	287	280	268	255	247	233	216	203	196	174	152	129	115	101	87	77	66	56	40	32	29	22	13	6	3	1	1	1	1

Socinskiet al. NEJM 2018

BCP: bevacizumab plus carboplatin plus paclitaxel
ABCP: atezolizumab plus BCP

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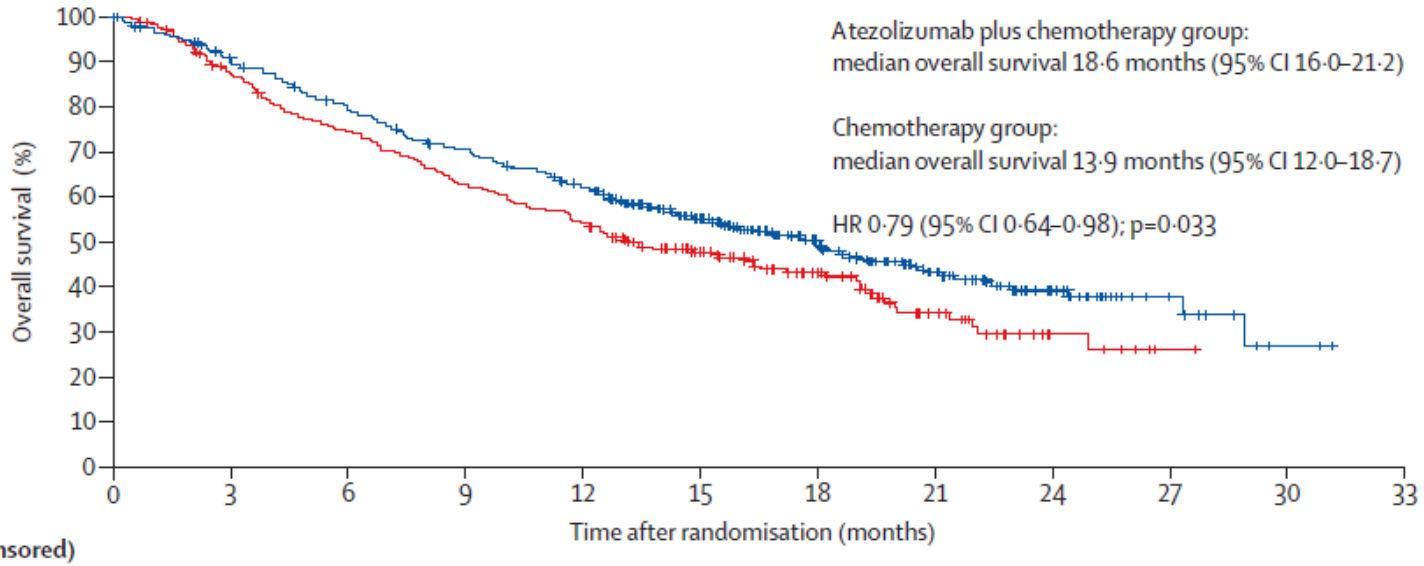
1L NSCLC, Adenokarzinom, Impower-130, Overall Survival

EMA Zulassung 08. Sep 2019



Number at risk (number censored)											
Atezolizumab plus chemotherapy group	451 (0)	400 (10)	351 (15)	305 (18)	268 (22)	194 (68)	129 (120)	75 (161)	40 (188)	12 (215)	4 (221)
Chemotherapy group	228 (0)	190 (12)	161 (13)	136 (13)	119 (13)	90 (28)	58 (52)	31 (70)	13 (85)	3 (94)	0 (0)

carboplatin plus nab-paclitaxel

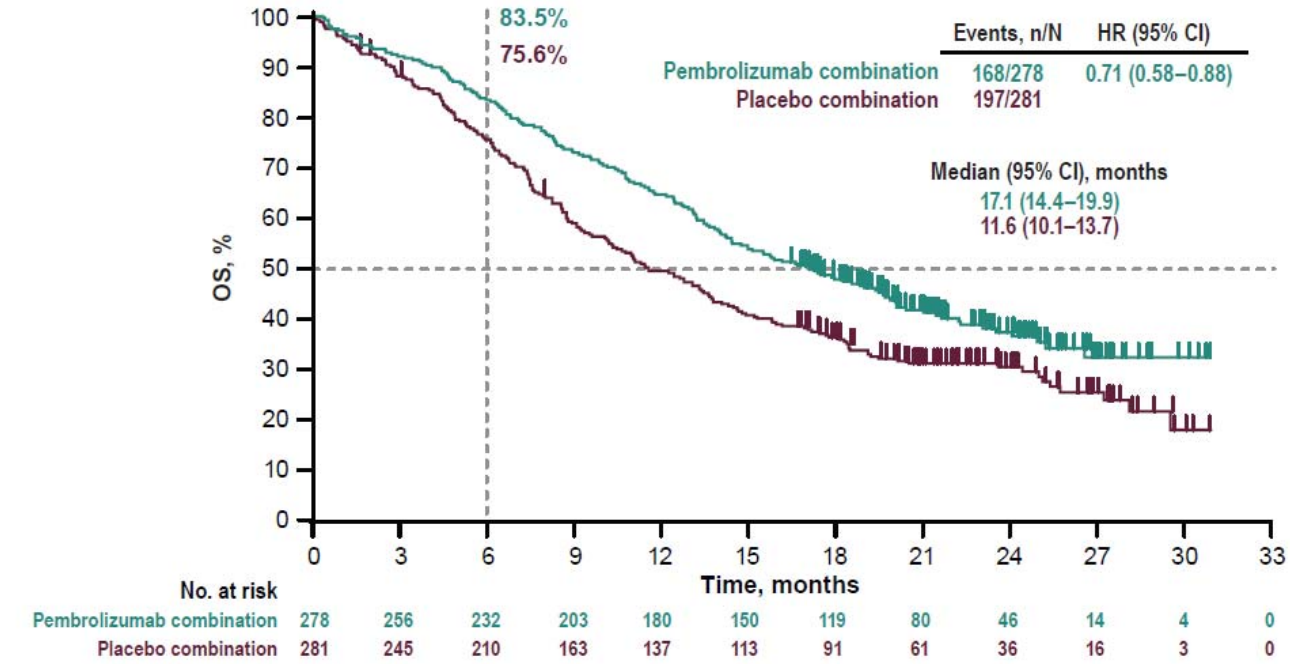
West al. Lancet 2019

Bristol-Myers Squibb

1L NSCLC, Plattenzellkarzinom, Keynote-407, Overall Survival

EMA Zulassung 14. März 2019

Figure 3. Kaplan-Meier Estimates of OS in the Total Population (ITT)



n, number of patients who died; N, number of patients in the group; NR, not reached.

carboplatin and paclitaxel/nab-paclitaxel

Luis Paz-Ares et al. ESMO 2019

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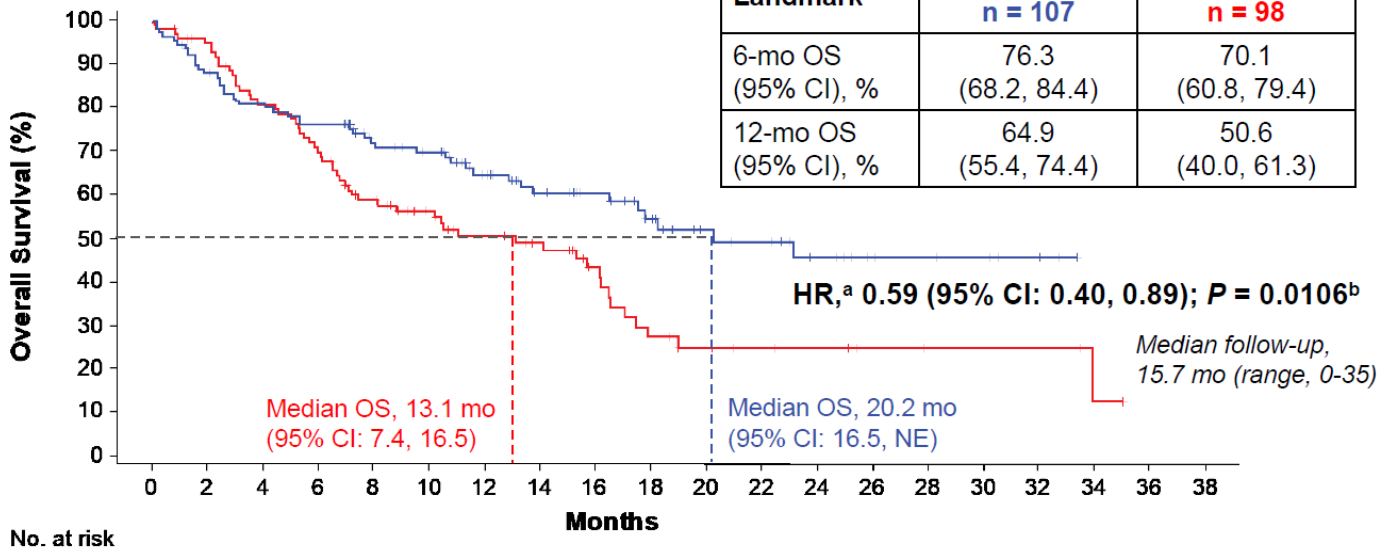
1L NSCLC, Impower-110, Overall Survival, TC3 or IC3

OS: TC3 or IC3 WT

BARCELONA 2019 ESMO congress

Landmark	Arm A (atezo) n = 107	Arm B (chemo) n = 98
6-mo OS (95% CI), %	76.3 (68.2, 84.4)	70.1 (60.8, 79.4)
12-mo OS (95% CI), %	64.9 (55.4, 74.4)	50.6 (40.0, 61.3)



No. at risk

Atezolizumab	107	94	85	80	66	61	48	40	34	25	18	16	11	7	6	5	2	
Chemotherapy	98	89	75	65	50	40	33	28	19	12	9	7	6	4	3	3	3	1

NE, not estimable. [a] Stratified. [b] Stratified log-rank.
Data cutoff: 10 September 2018.

Spigel et al. IMpower110 Interim OS Analysis
https://bit.ly/2IxRNHQ

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Spigel et al. ESMO 2019

Cisplatin or Carboplatin + Pemetrexed or Gemcitabine

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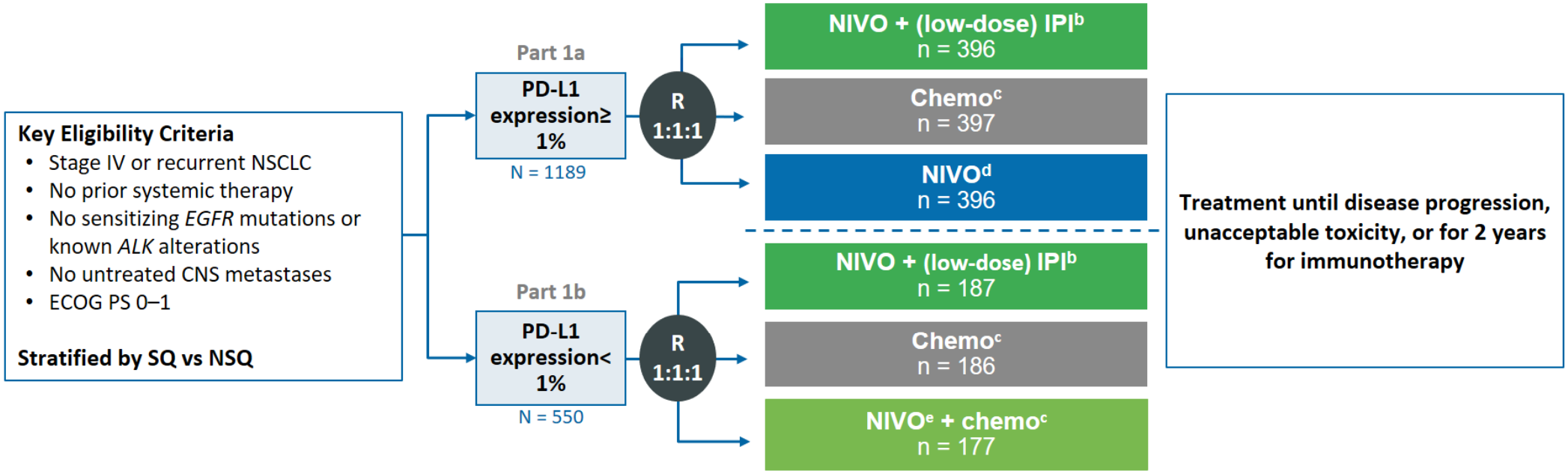
1L NSCLC, CheckMate-227, study design



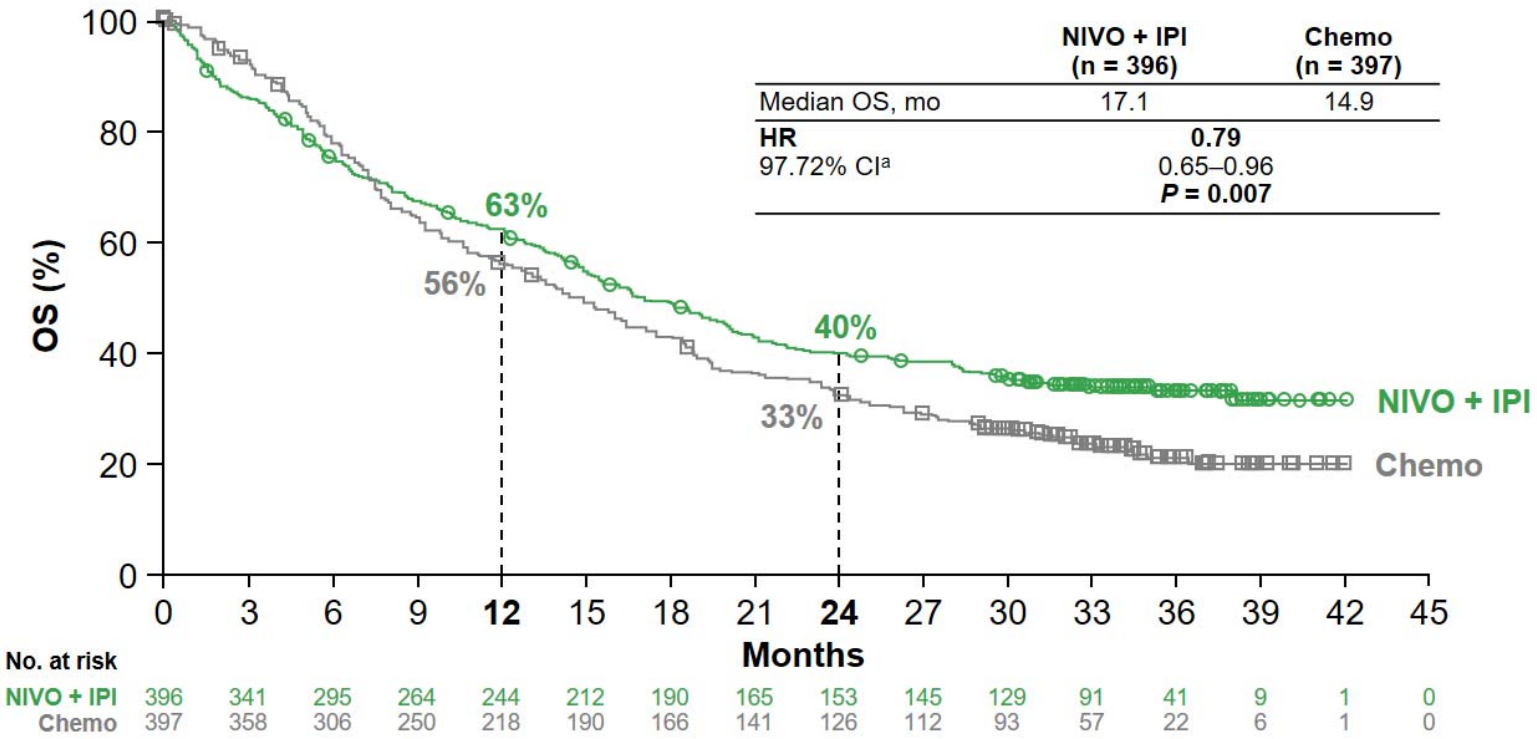
Independent co-primary endpoints: NIVO + IPI vs chemo
- PFS in high TMB (≥10 mut/Mb) population[f]
- OS in PD-L1 ≥ 1% population[g]

Secondary endpoints (PD-L1 hierarchy):
- PFS: **NIVO + chemo vs chemo** in PD-L1 < 1%
- OS: **NIVO + chemo vs chemo** in PD-L1 < 1%
- OS: **NIVO vs chemo** in PD-L1 ≥ 50%

Database lock: July 2, 2019; **minimum follow-up for primary endpoint: 29.3 months**

Peters et al. ESMO 2019

1L NSCLC, CheckMate-227, Overall Survival, PD-L1≥ 1%



Peters et al. ESMO 2019

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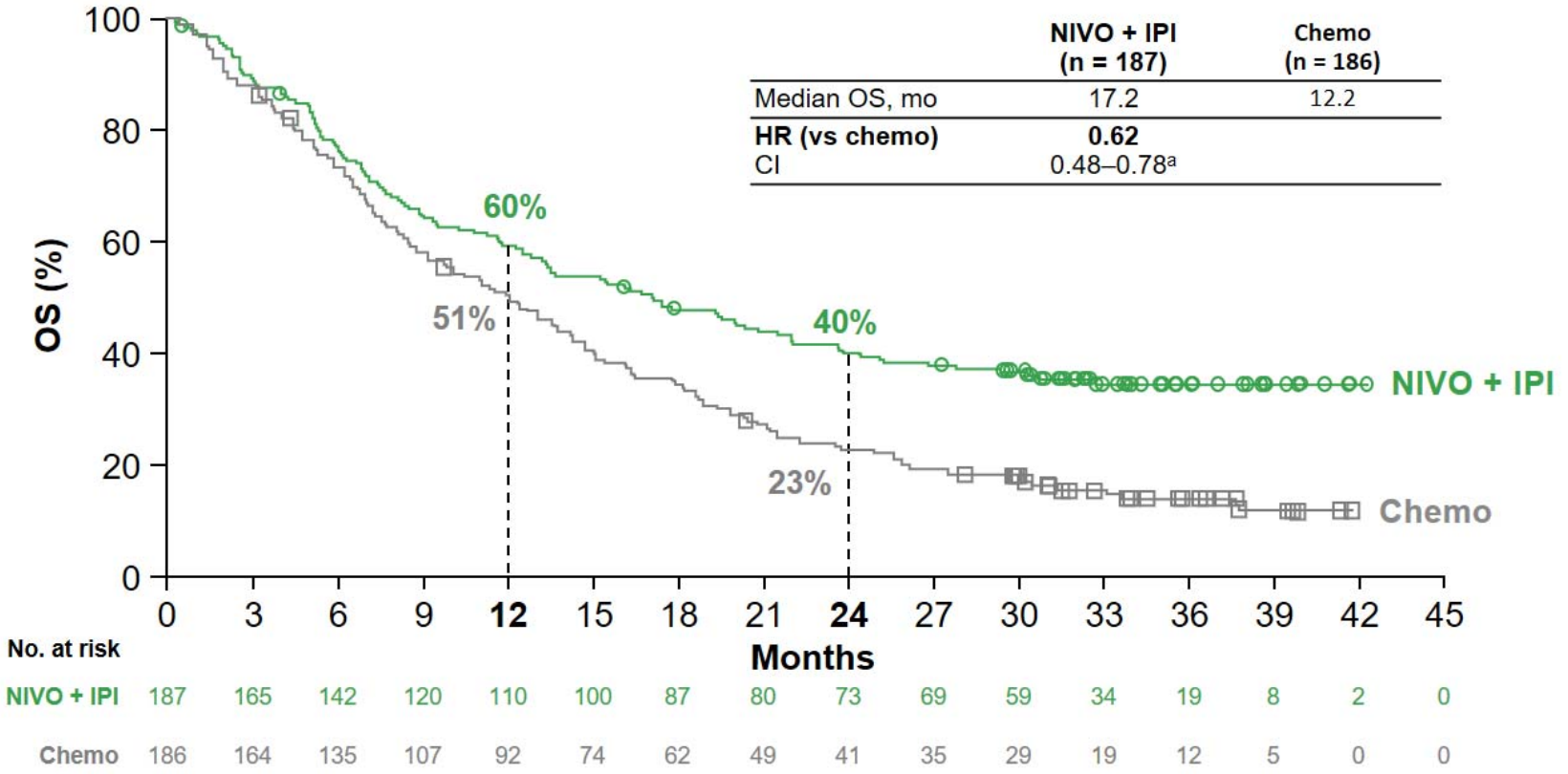
1L NSCLC, CheckMate-227, Overall Survival, < 1%



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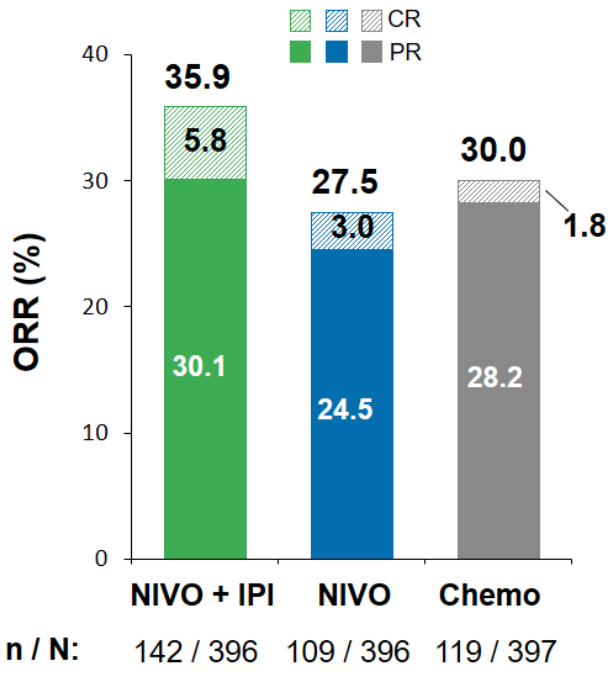
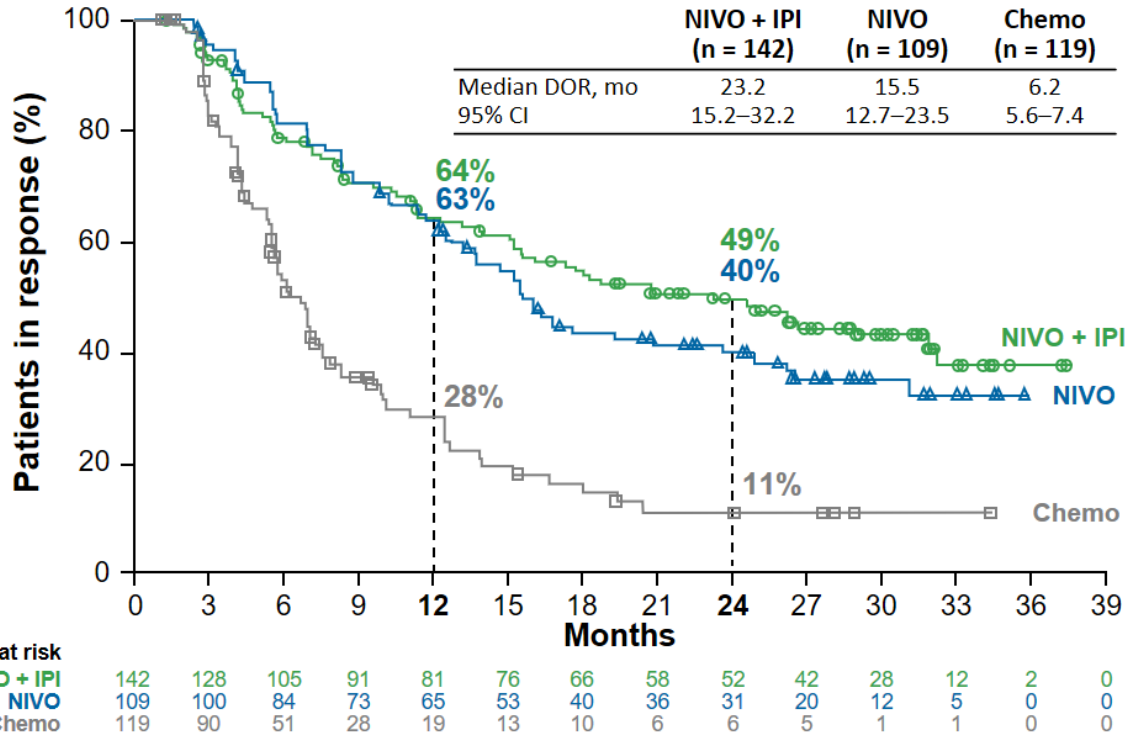
Peters et al. ESMO 2019

1L NSCLC, CheckMate-227, ORR & DOR, PD-L1≥ 1%

ORR by BICR



DOR by BICR[a]



Peters et al. ESMO 2019

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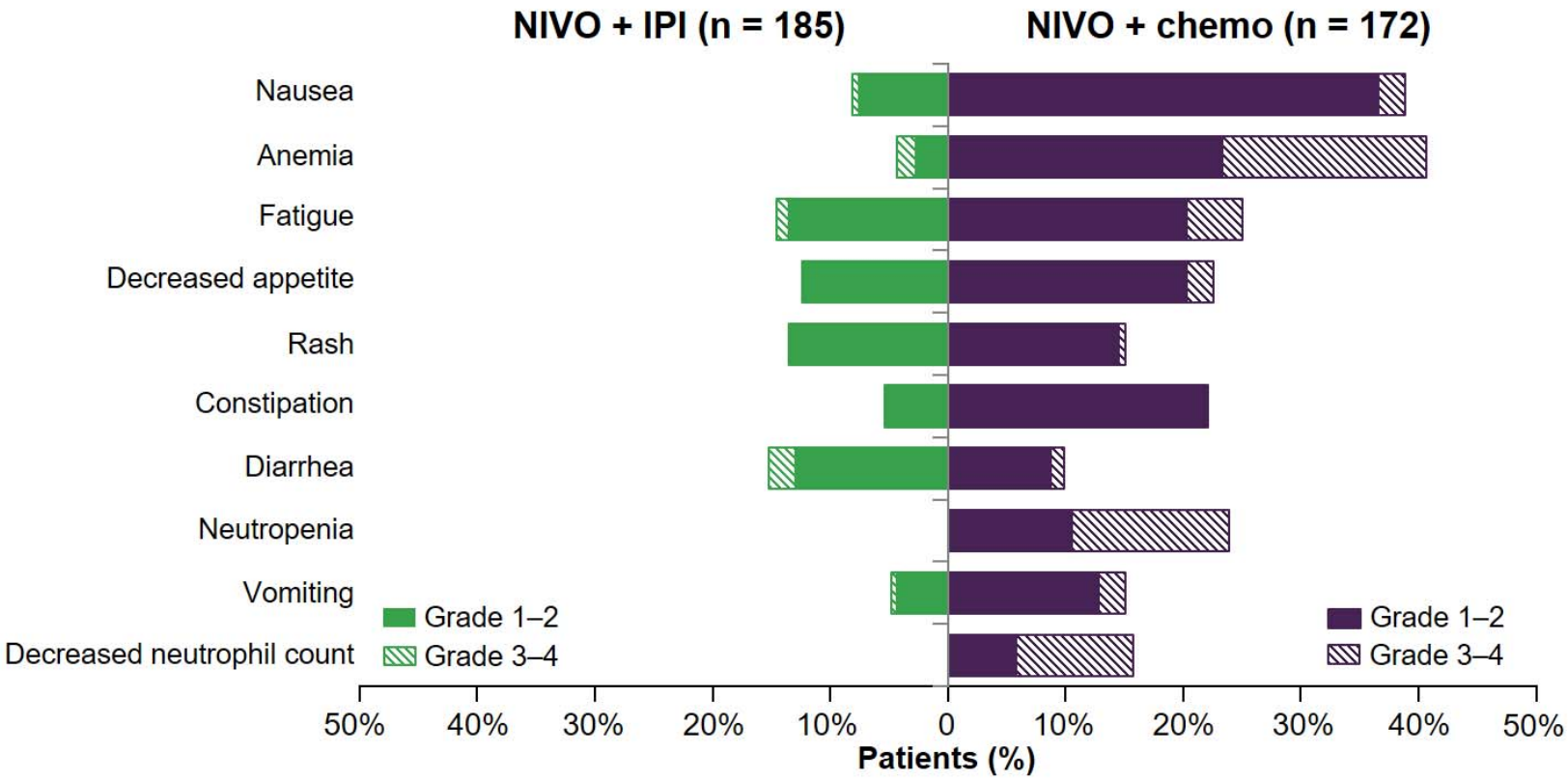
1L NSCLC, CheckMate-227, häufigsten therapieassoziierte AEs



Peters et al. ESMO 2019

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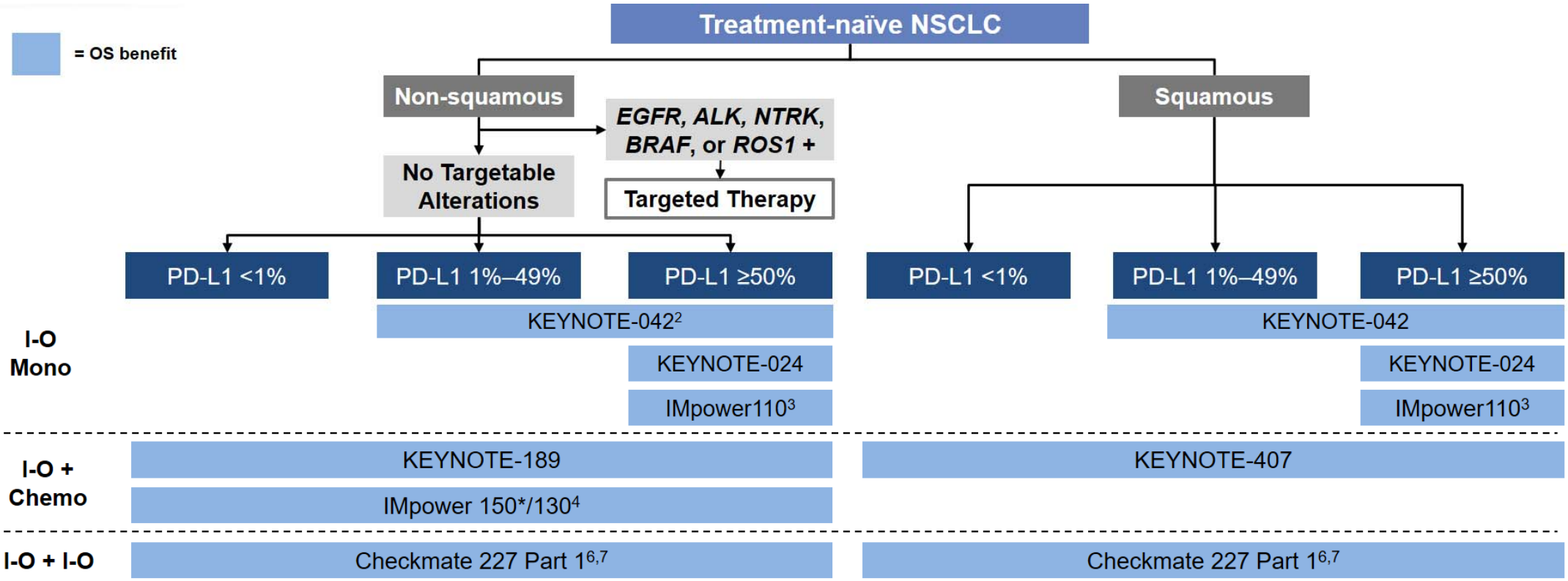
Aktueller und potenziell künftiger 1L NSCLC Behandlungsalgorithmus

Phase 3 research with I-O + I-O[1-4]



This diagram is intended for educational purposes only. It reflects the views of the presenter and not the current treatment landscape in NSCLC.

6, 2019. 5. Barlesi F et al. Oral presentation at ESMO 2018. LBA54. 6. Hellmann MD et al. N Engl J Med. 2018;378(22):2093-2104. 7. Bristol-Myers Squibb [press release]. July 24, 2019. *In patients with EGFR-mutant or ALK-positive NSCLC, atezolizumab, in combination with bevacizumab, paclitaxel, and carboplatin, is indicated in the EU after failure of appropriate targeted therapies.11. European Medicines Agency. ema.europa.eu. Accessed September 24, 2019. 2. Mok TSK et al. Oral presentation at ELCC 2019. 102O. 3. Spigel D et al. Oral presentation at ESMO 2019. LBA78. 4. Roche [press release]. September

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Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Bronchuskarzinom
SCLC

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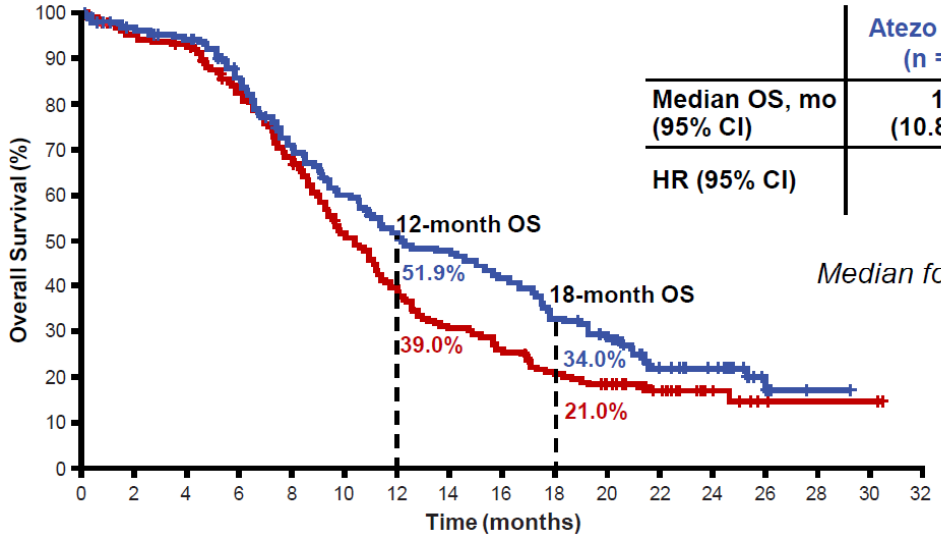
1L ES-SCLC, Impower-133, Overall Survival

EMA Zulassung 06. Sep 2019

BARCELONA 2019 ESMO congress

Updated OS in ITT



	Atezo + CP/ET (n = 201)	Placebo + CP/ET (n = 202)
Median OS, mo (95% CI)	12.3 (10.8, 15.8)	10.3 (9.3, 11.3)
HR (95% CI)	0.76 (0.60, 0.95) p = 0.0154[a]	

Median follow-up, 22.9 months

No. at risk															
Atezo + CP/ET	201	187	180	159	130	109	93	86	75	61	51	28	21	8	1
Placebo + CP/ET	202	189	183	160	131	97	74	58	49	39	33	20	8	3	2	2

[a]p-value is provided for descriptive purpose.
CCOD 24 January 2019

IMpower133 Updated OS Analysis: presented by Dr Martin Reck

http://bit.ly/2Z32WhW

Reck et al. ESMO 2019

carboplatin and etoposid

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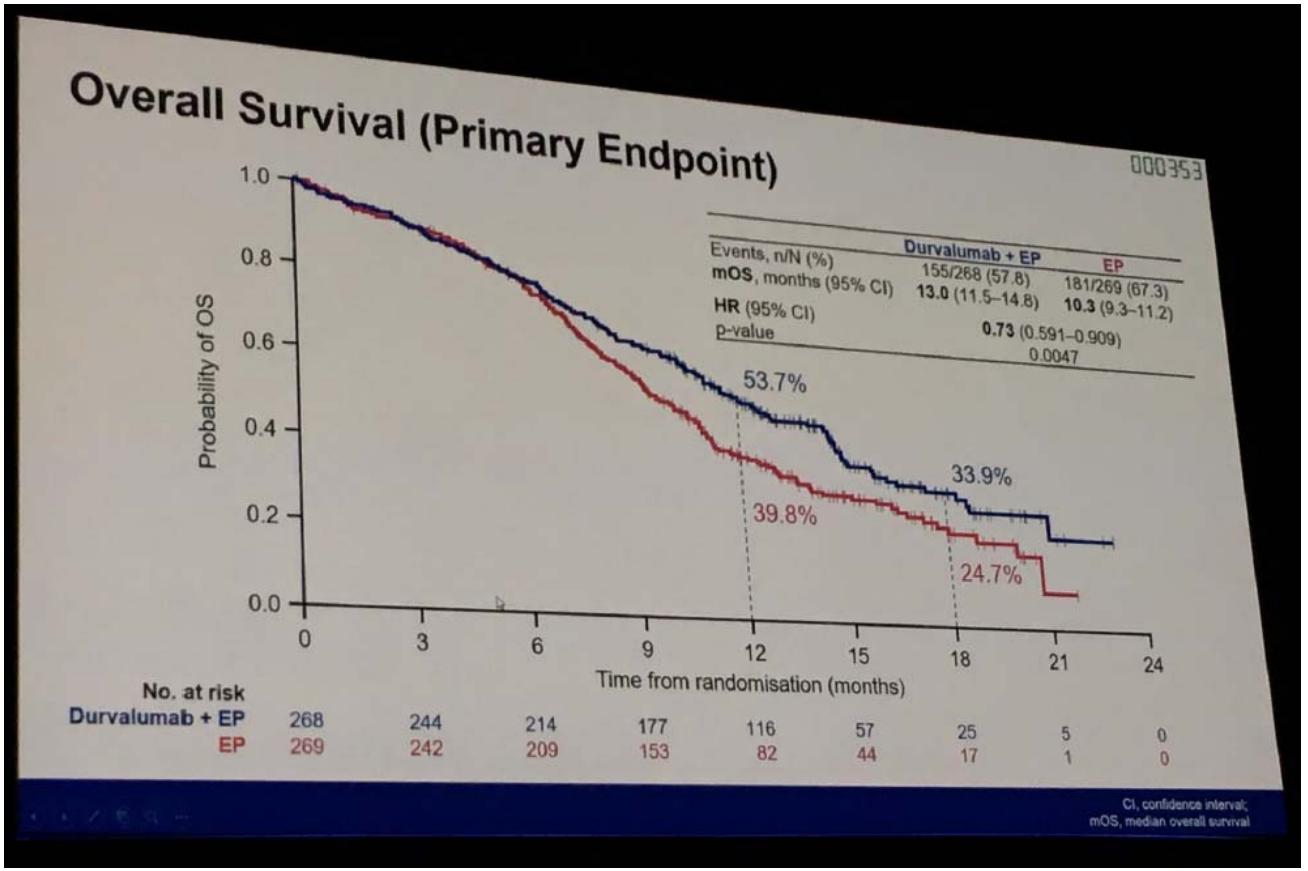
1L ES-SCLC, CASPIAN, Overall Survival



Cisplatin or carboplatin and etoposid

Paz-Arez et al. ESMO 2019

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Brustkrebs

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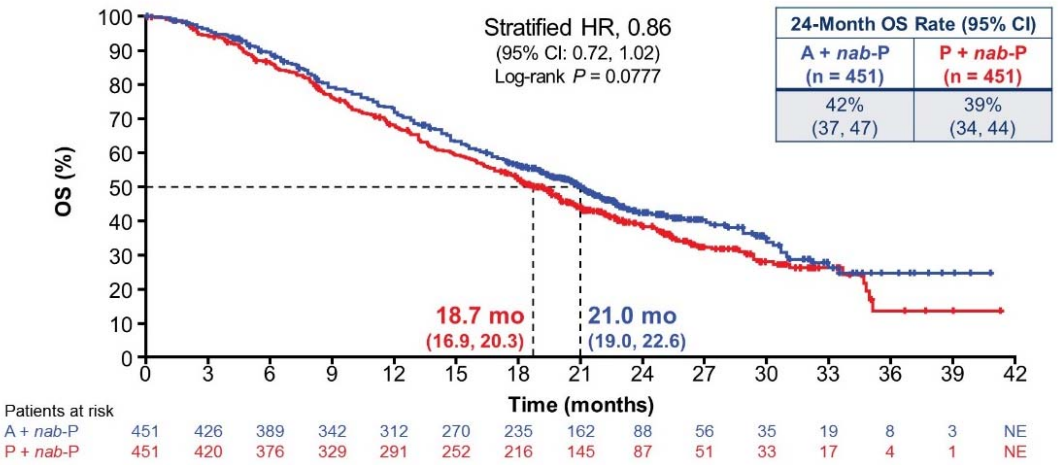
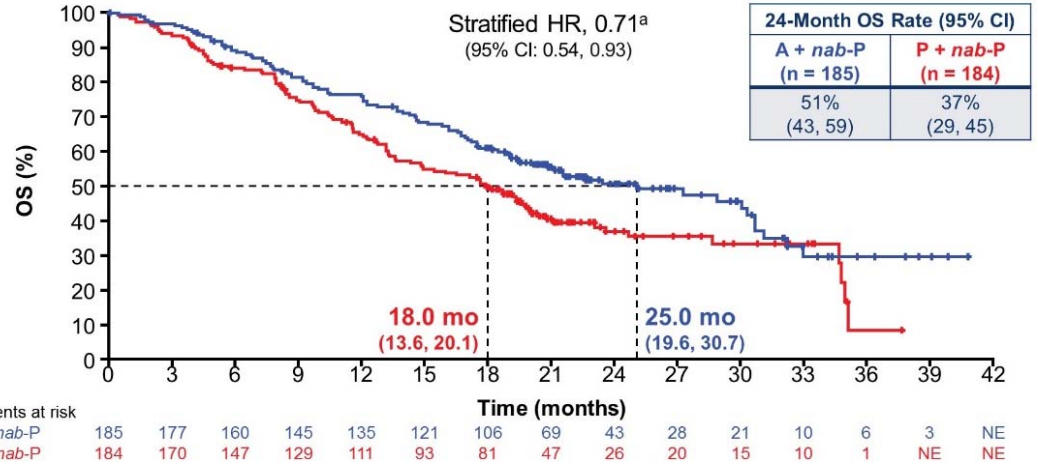
1L mTNBC, Impassion-130, Overall Survival, PD-L1 <1%

EMA Zulassung 29. Aug 2019

OS in ITT Population



OS in PD-L1+ Population



Schmid et al. ASCO 2019

Nab-paclitaxel

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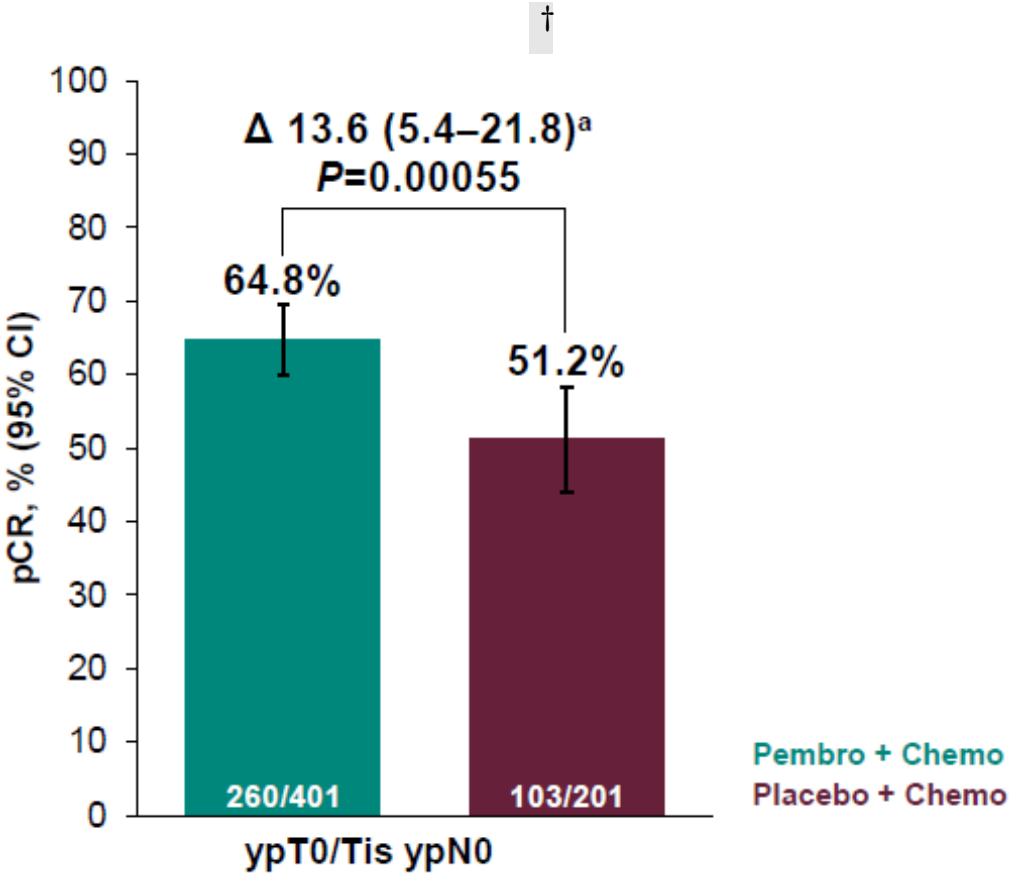
Peri-operativ, TNBC, Keynote-522, pathological Complete Response



Results

- Addition of pembrolizumab to platinum-containing neoadjuvant chemotherapy resulted in a statistically significant and clinically meaningful increase in pCR (ypT0/Tis ypN0) of 13.6 percentage points (*P*=0.00055)
  - Consistent benefit is seen with other pCR definitions (ypT0 ypN0 and ypT0/Tis; data not shown)

Schmid et al. ESMO 2019

Carboplatin + Paclitaxel, Doxo/Epirubicin + Cyclophosphamide

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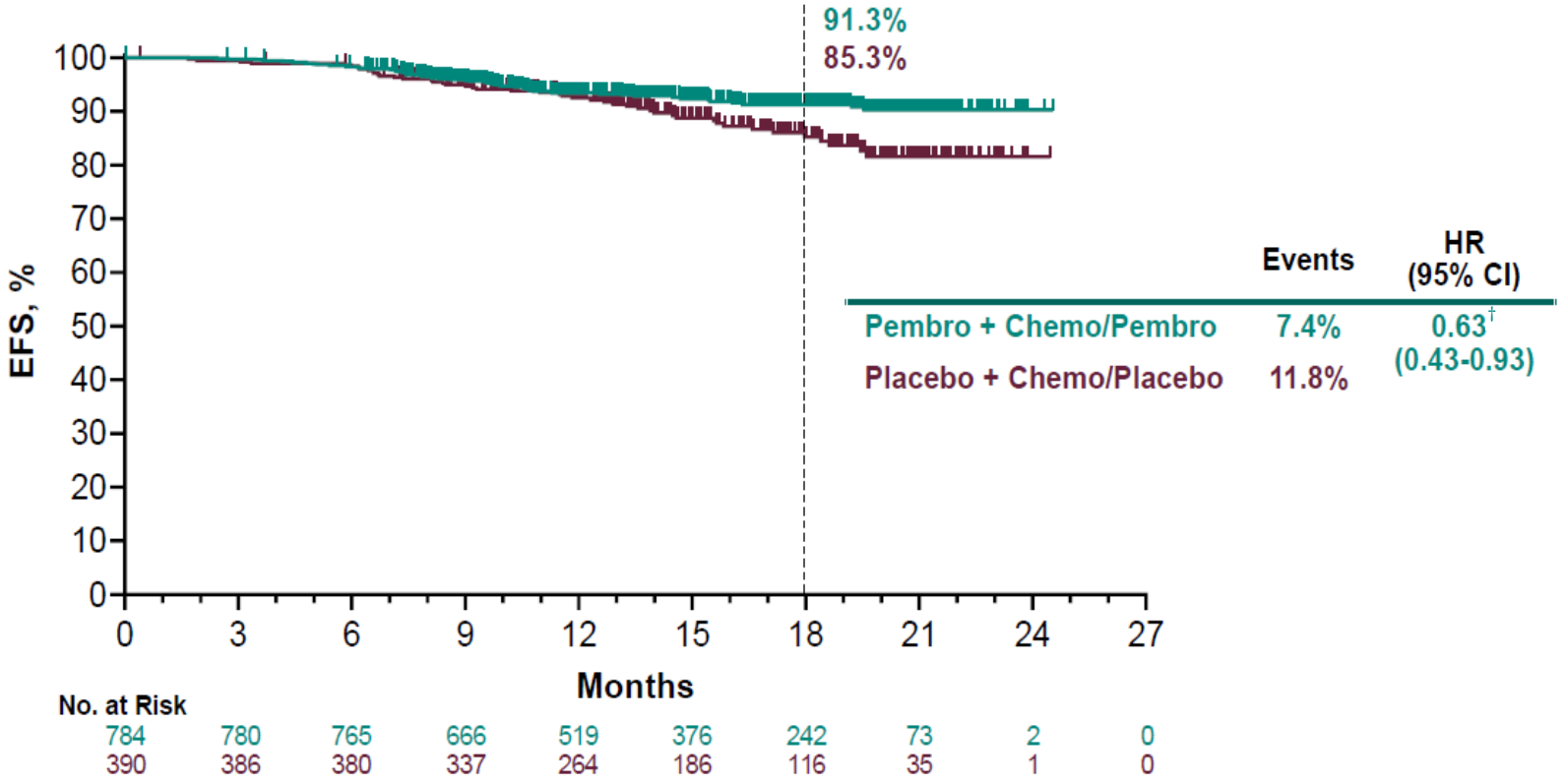
Peri-operativ, TNBC, Keynote-522, Event Free Survival



At this early timepoint, there was a favorable trend for EFS in the pembrolizumab arm (HR=0.63)

Schmid et al. ESMO 2019

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Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Urothelkarzinom

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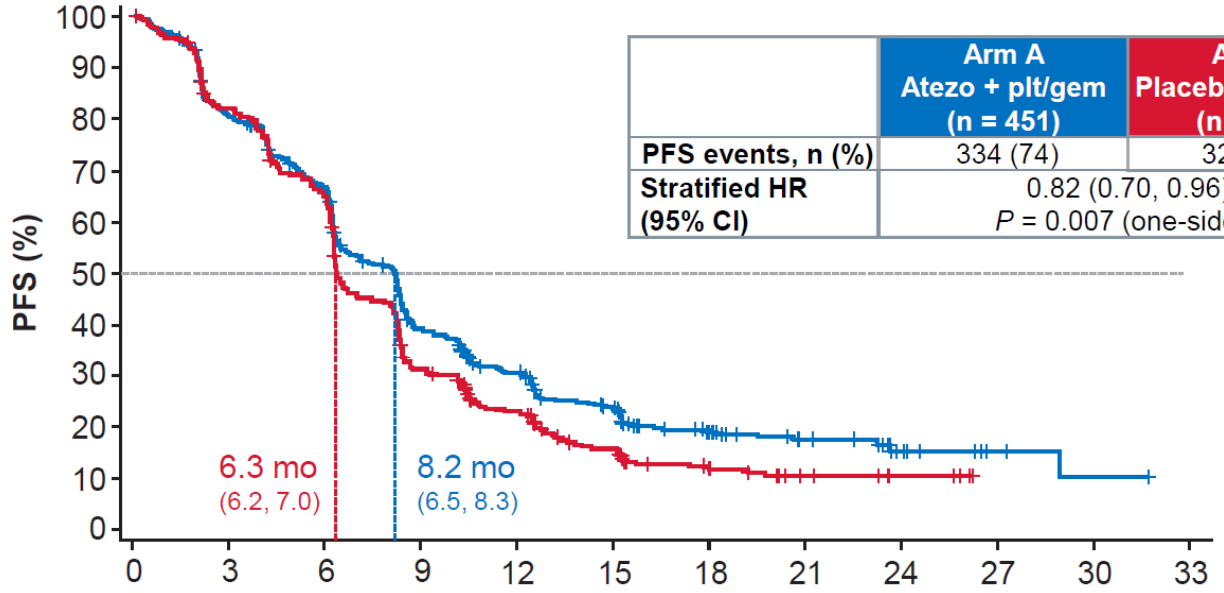
1L mUC, Imvigor-130, Progression Free Survival

Final PFS: ITT (Arm A vs Arm C)



	Arm A Atezo + plt/gem (n = 451)	Arm C Placebo + plt/gem (n = 400)
PFS events, n (%)	334 (74)	326 (82)
Stratified HR (95% CI)	0.82 (0.70, 0.96) *P* = 0.007 (one-sided)	

No. at Risk												
Atezo + plt/gem	451	345	282	160	111	74	42	22	10	4	2	NE
Placebo + plt/gem	400	317	246	116	73	40	18	11	4	NE	NE	NE

NE, not estimable. Data cutoff 31 May 2019; median survival follow-up 11.8 months (all patients).

IMvigor130—ESMO 2019 (LBA14): presented by Dr Enrique Grande

http://bit.ly/2Z1bPbD

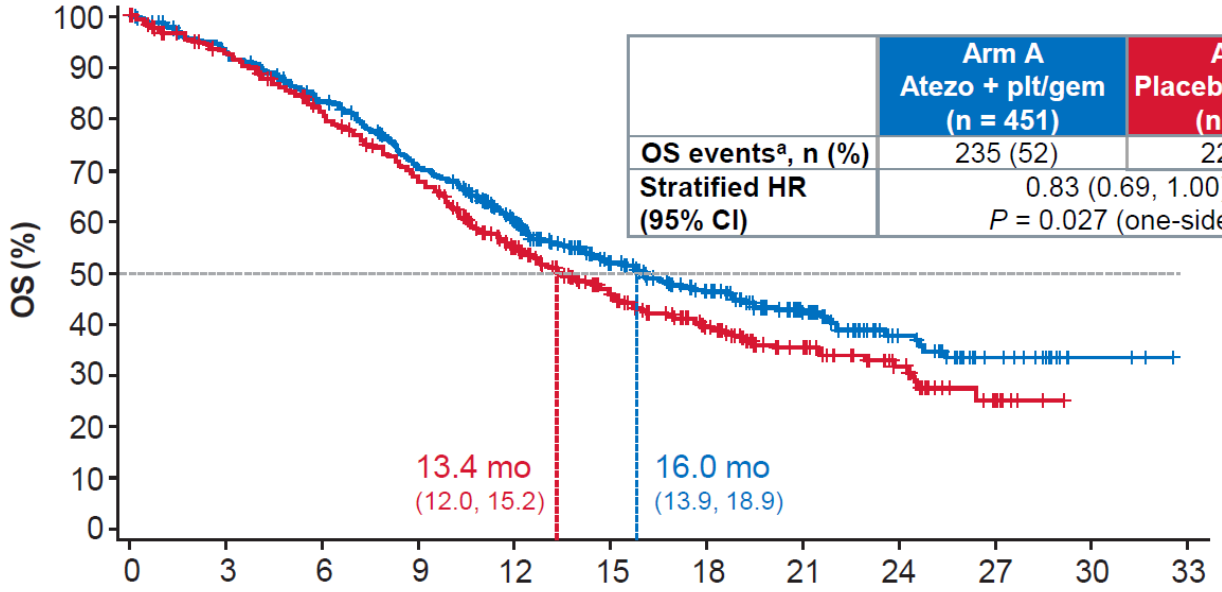
Grande et al. ESMO 2019

Platin + Gemcitabine

Bristol-Myers Squibb

1L mUC, Imvigor-130, Overall Survival

Interim OS: ITT (Arm A vs Arm C)



	Arm A Atezo + plt/gem (n = 451)	Arm C Placebo + plt/gem (n = 400)
OS events[a], n (%)	235 (52)	228 (57)
Stratified HR (95% CI)	0.83 (0.69, 1.00) *P* = 0.027 (one-sided)[b]	

No. at Risk												
Atezo + plt/gem	451	408	360	301	229	163	117	72	36	16	3	NE
Placebo + plt/gem	400	359	308	255	182	123	79	49	25	8	NE	NE

Data cutoff 31 May 2019; median survival follow-up 11.8 months (all patients). [a] 5% of patients from Arm A and 20% of patients from Arm C received non-protocol immunotherapy. [b] Did not cross the interim efficacy boundary of 0.007 per the O'Brien-Fleming alpha spending function.

IMvigor130—ESMO 2019 (LBA14): presented by Dr Enrique Grande http://bit.ly/2Z1bPbD

Grande et al. ESMO 2019

Platin + Gemcitabine

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Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Nierenzellkarzinom

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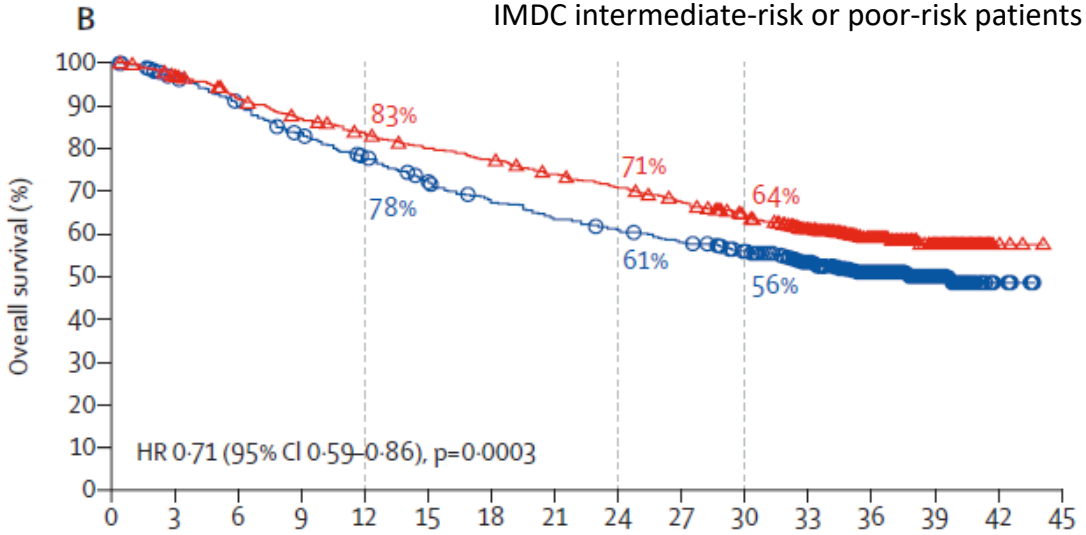
1L RCC, CheckMate-214, Overall Survival

EMA Zulassung 14. Jan 2019

IMDC intermediate-risk or poor-risk patients



Number at risk (number censored)

Nivolumab plus ipilimumab	550 (0)	523 (8)	492 (11)	464 (13)	443 (16)	425 (18)	410 (18)	389 (21)	371 (22)	351 (25)	327 (33)	271 (76)	161 (178)	58 (278)	4 (332)	0 (336)
Sunitinib	546 (0)	507 (16)	472 (17)	435 (20)	404 (23)	367 (28)	345 (29)	325 (29)	310 (30)	295 (31)	275 (41)	232 (71)	145 (150)	55 (238)	5 (287)	0 (292)

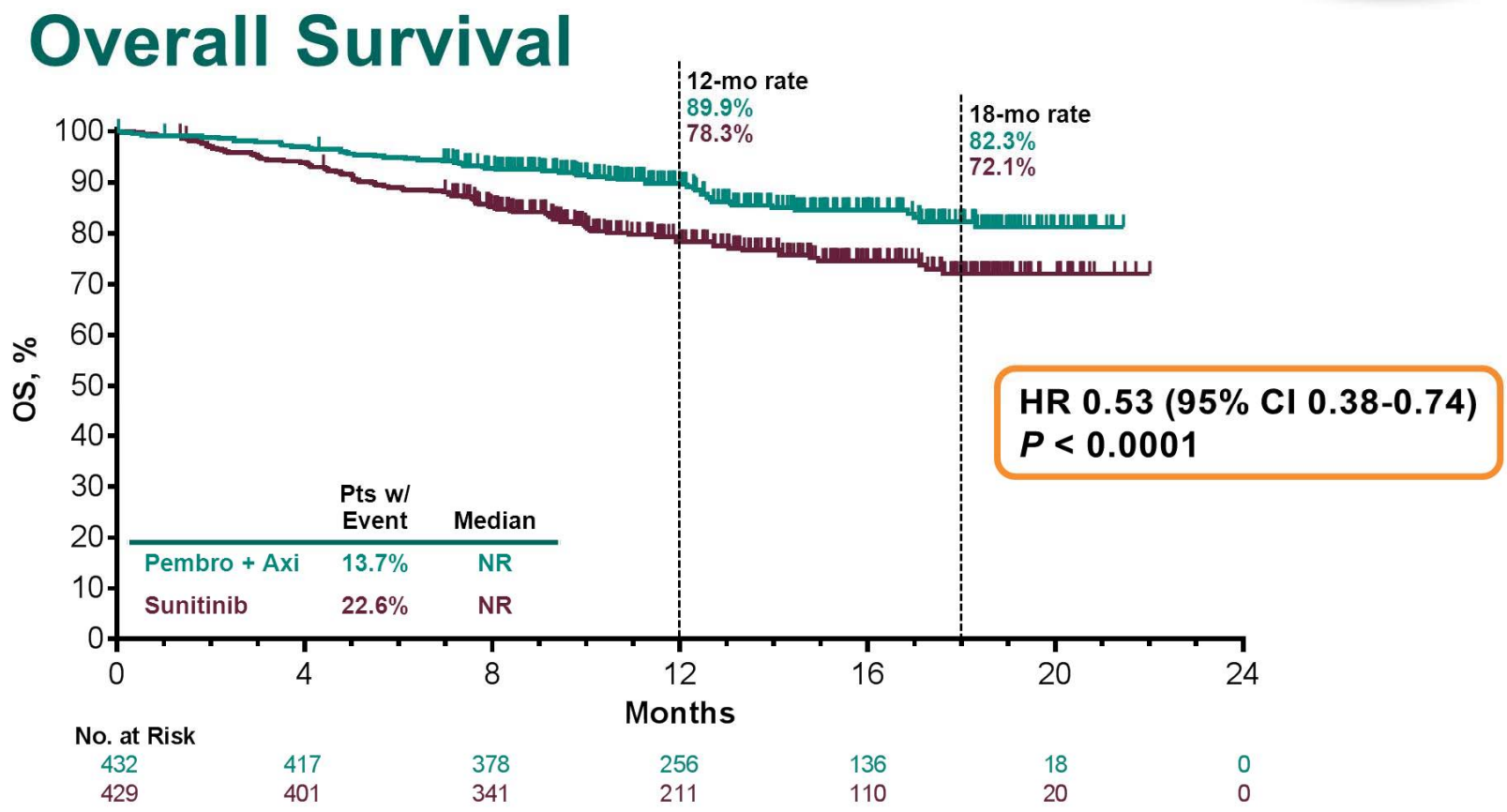
	IMDC intermediate-risk or poor-risk patients		
	Nivolumab plus ipilimumab (n=425)	Sunitinib (n=422)	p value
Proportion of patients with confirmed objective responses, % (95% CI)	42% (37–47)	29% (25–34)	0·0001
Best overall response			
Complete response	48 (11%)	5 (1%)	..
Partial response	130 (31%)	119 (28%)	..
Stable disease	110 (26%)	174 (41%)	..
Progressive disease	106 (25%)	80 (19%)	..
Unable to determine or not reported	31 (7%)	44 (10%)	..
Median time to confirmed objective response (IQR), months*	n=176; 2·8 (2·7–3·1)	n=124; 4·0 (2·8–5·5)	..
Median time to confirmed complete response (IQR), months	n=48; 5·8 (2·9–10·5)	Not calculated	..
Patients with duration of response ≥18 months*	92/176 (52%)	35/124 (28%)	..
Patients with ongoing response*	104/176 (59%)	43/124 (35%)	..
Patients with ongoing complete response	42/48 (88%)	4/5 (80%)	..

Motzer et al. Lancet 2019

Bristol-Myers Squibb

1L RCC, Keynote-426, Overall Survival

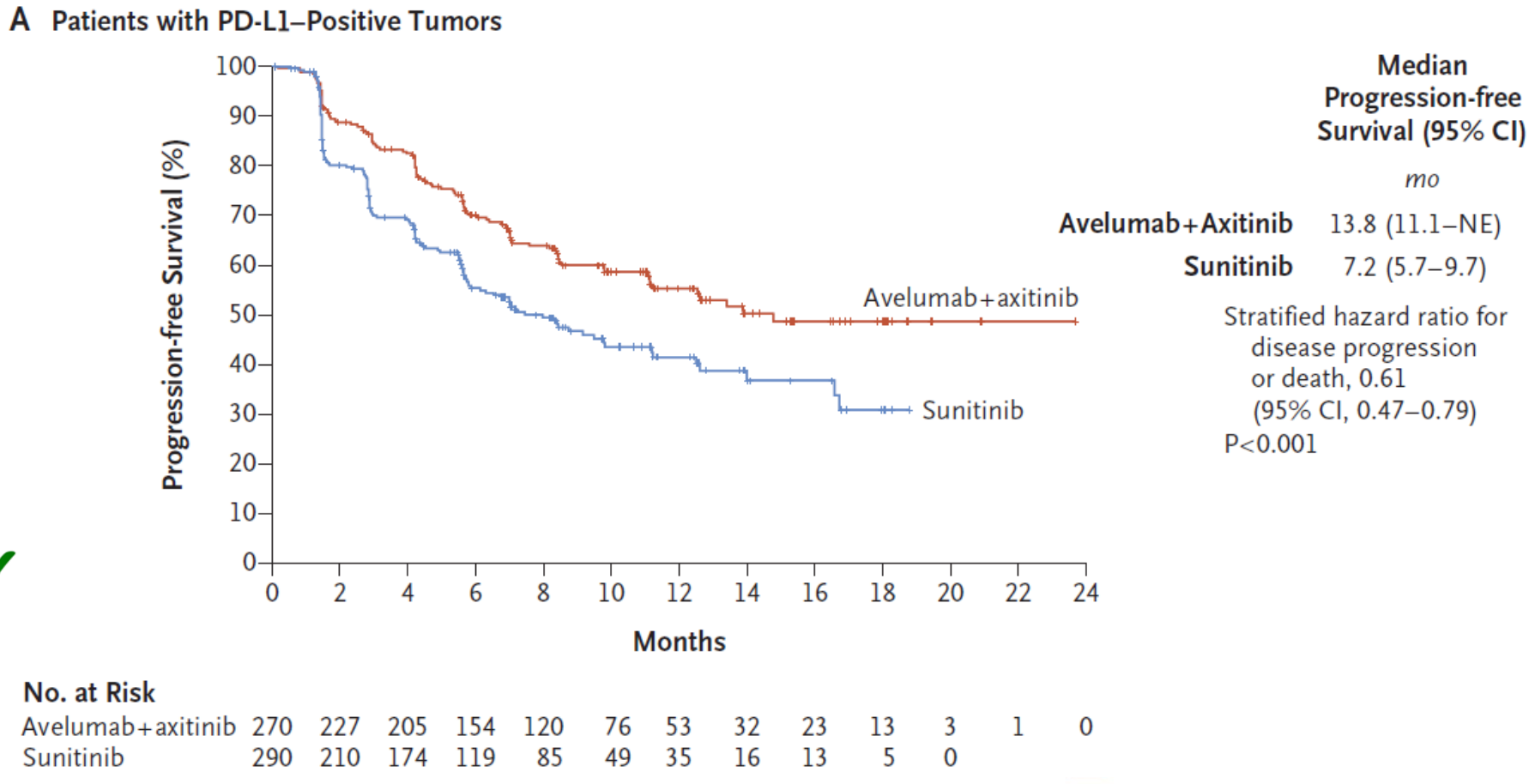
EMA Zulassung 04. Nov 2019



Powels et al. ASCO GU 2019

Data cutoff date: Aug 24, 2018.

1L RCC, JAVELIN Renal 101, Progresson Free Survival, PD-L1 ≥ 1



Primary endpoints:

- PFS PD-L1 ≥ 1 ✓
- OS PD-L1 ≥ 1

Motzer et al. NEJM 2019

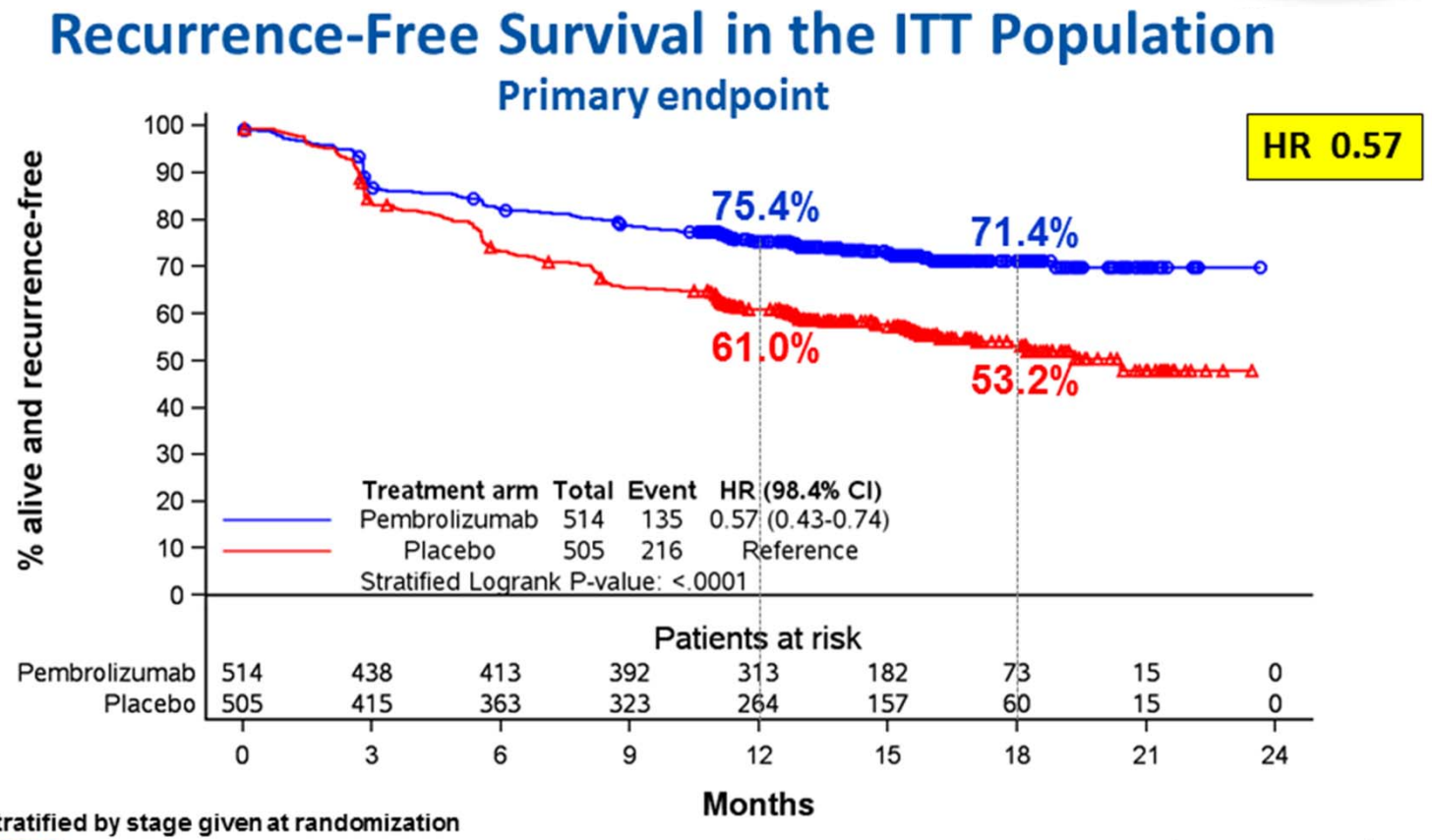
Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Melanom

Bristol-Myers Squibb

Adj MEL, Keynote-054, Event Free Survival

EMA Zulassung
17. Dez 2018

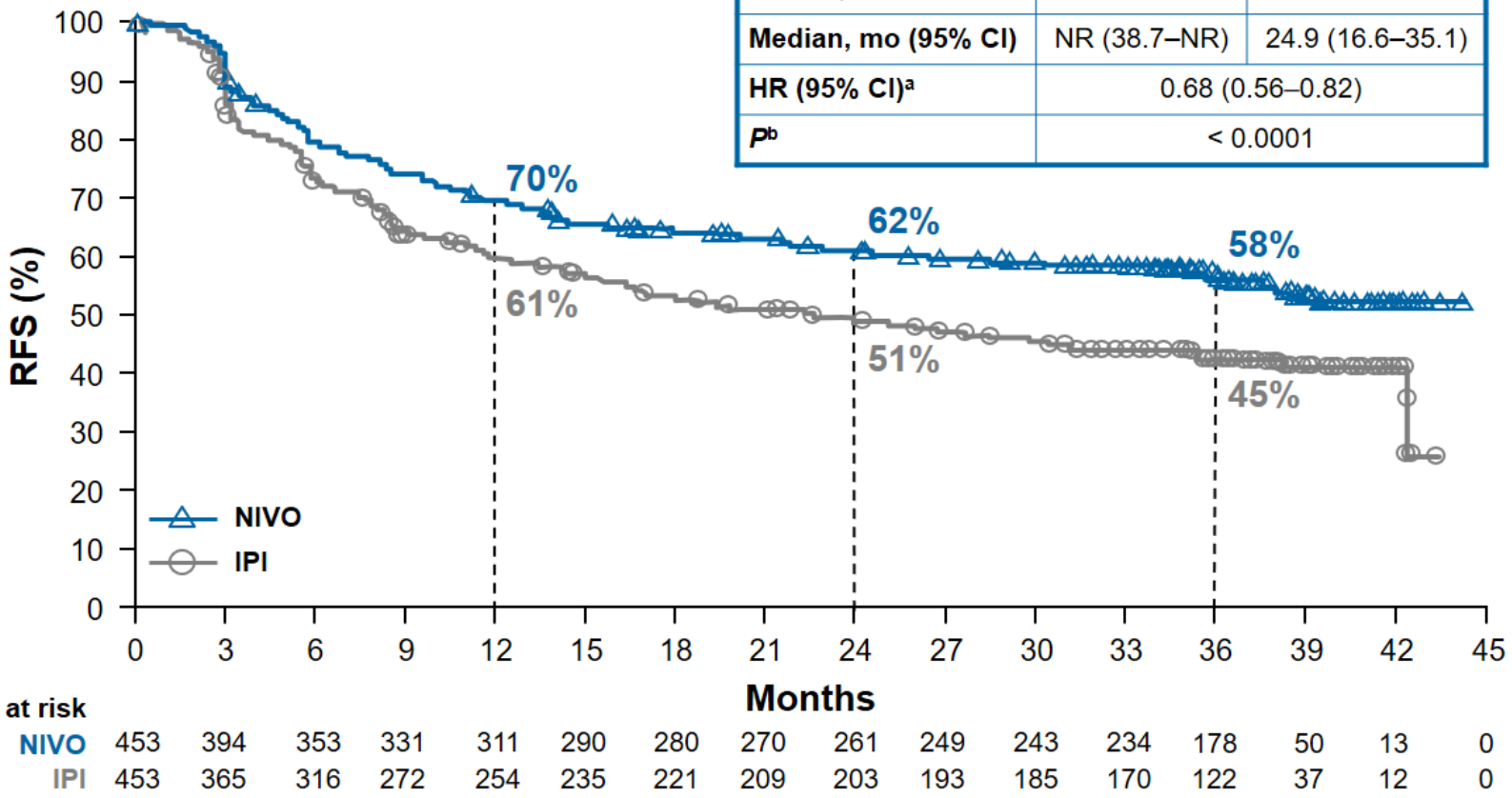


Eggermont et al. AACR 2018

The future of cancer therapy

Adj MEL, CheckMate-238, Event Free Survial

	NIVO (n = 453)	IPI (n = 453)
Events, n	188	239
Median, mo (95% CI)	NR (38.7–NR)	24.9 (16.6–35.1)
HR (95% CI)[a]	0.68 (0.56–0.82)	
P[b]	< 0.0001	



Weber et al. ESMO 2019

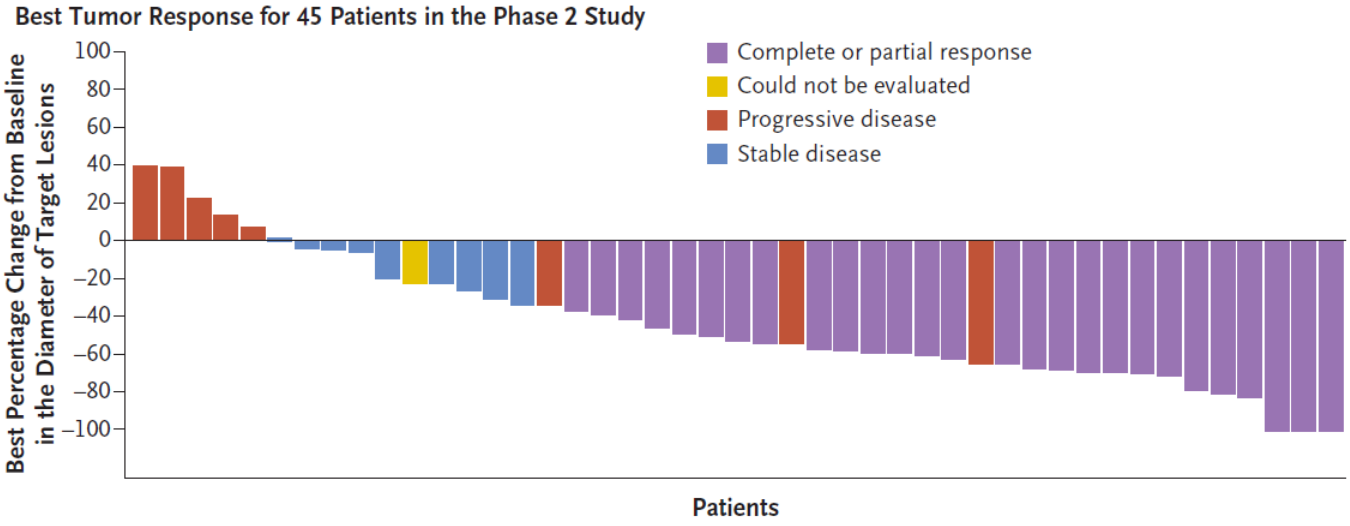
Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Kutanes Plattenzellkarzinom

Bristol-Myers Squibb

1L CSCC, Impower CSCC 1, Overall Response Rate

EMA Zulassung 01. Juli 2019



Cemiplimab

Outcome	Expansion Cohorts of the Phase 1 Study (N=26)	Metastatic-Disease Cohort of the Phase 2 Study (N=59)
Best overall response — no. (%)†		
Complete response	0	4 (7)
Partial response	13 (50)	24 (41)
Stable disease	6 (23)	9 (15)
Progressive disease	3 (12)	11 (19)
Could not be evaluated‡	3 (12)	7 (12)
Nontarget lesions only§	1 (4)	4 (7)

Migden et al. Lancet 2019

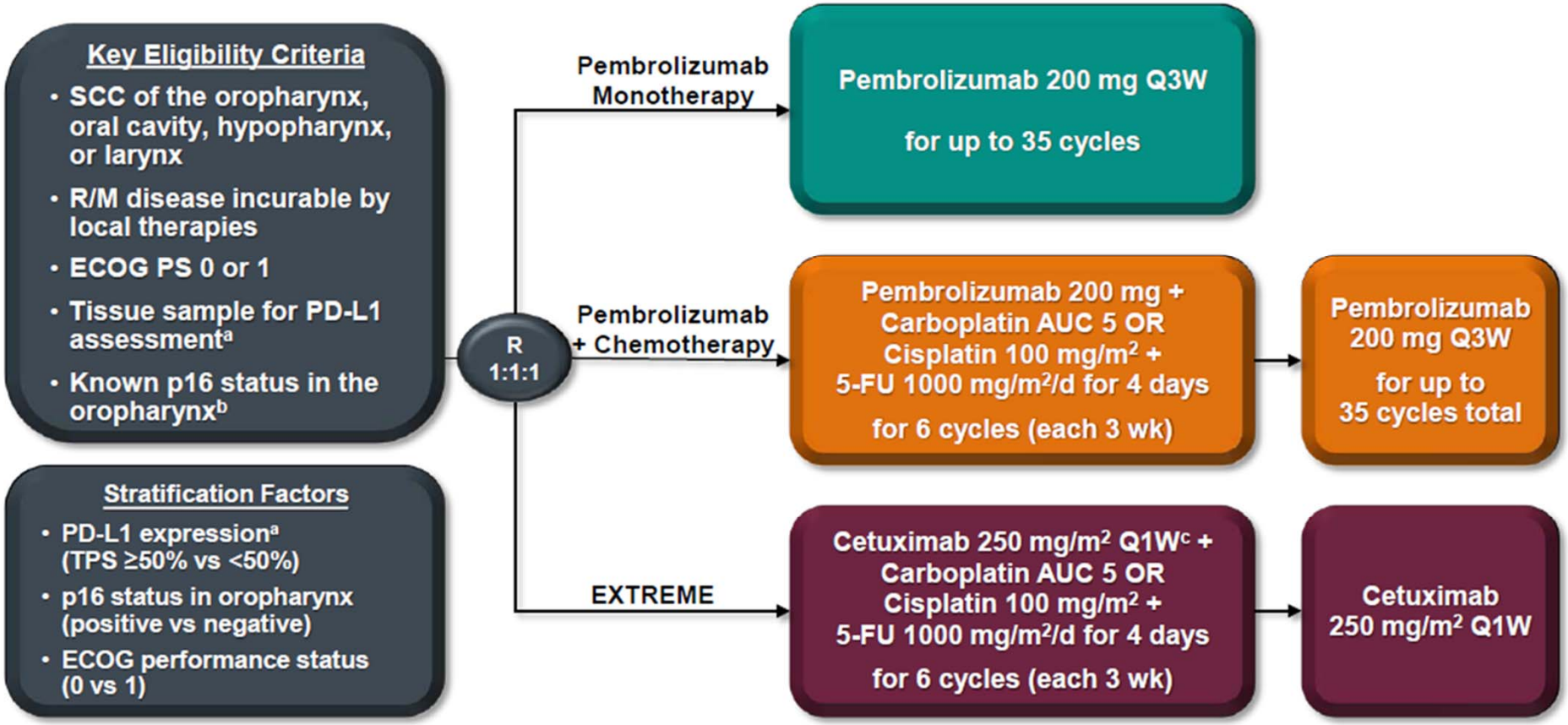
Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Kopf-Hals-Tumoren

Bristol-Myers Squibb

1L H&N, Keynote-048, study design

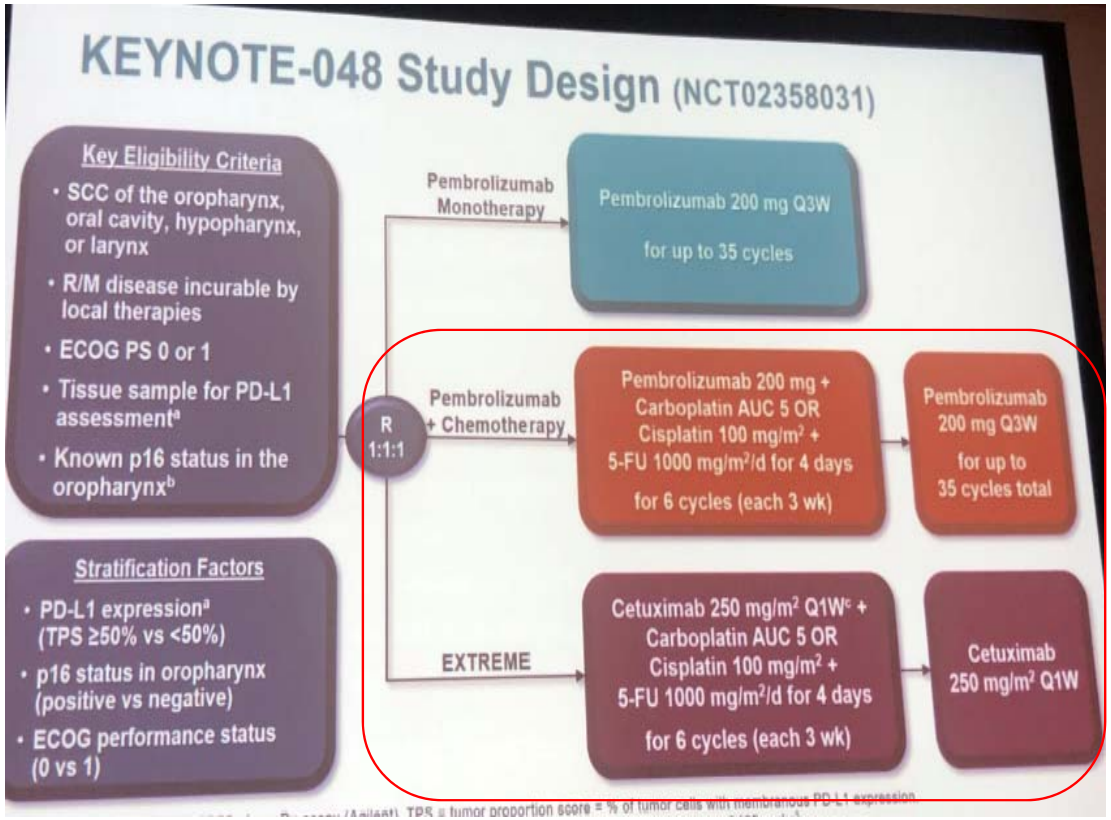
Primary endpoints:
OS and PFS
- CPS ≥20
- CPS ≥1
- ITT

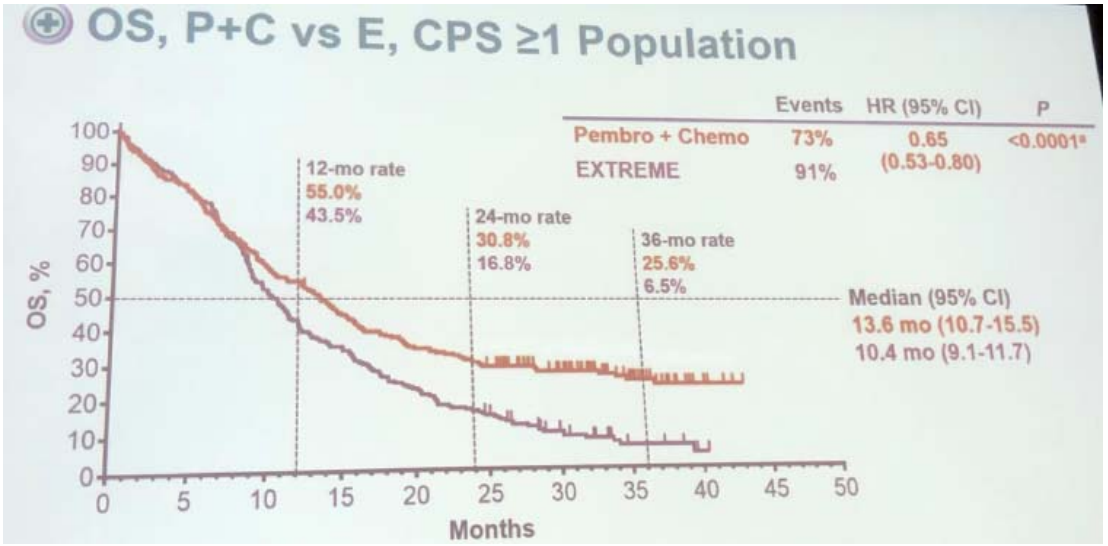


Rischin et al. ASCO 2019

[a]Assessed using the PD-L1 IHC 22C3 pharmDx assay (Agilent). TPS = tumor proportion score = % of tumor cells with membranous PD-L1 expression. [b]Assessed using the CINtec p16 Histology assay (Ventana); cutpoint for positivity = 70%. [c]Following a loading dose of 400 mg/m².

1L H&N, Keynote-048, Overall Survival Pembro + Chemo





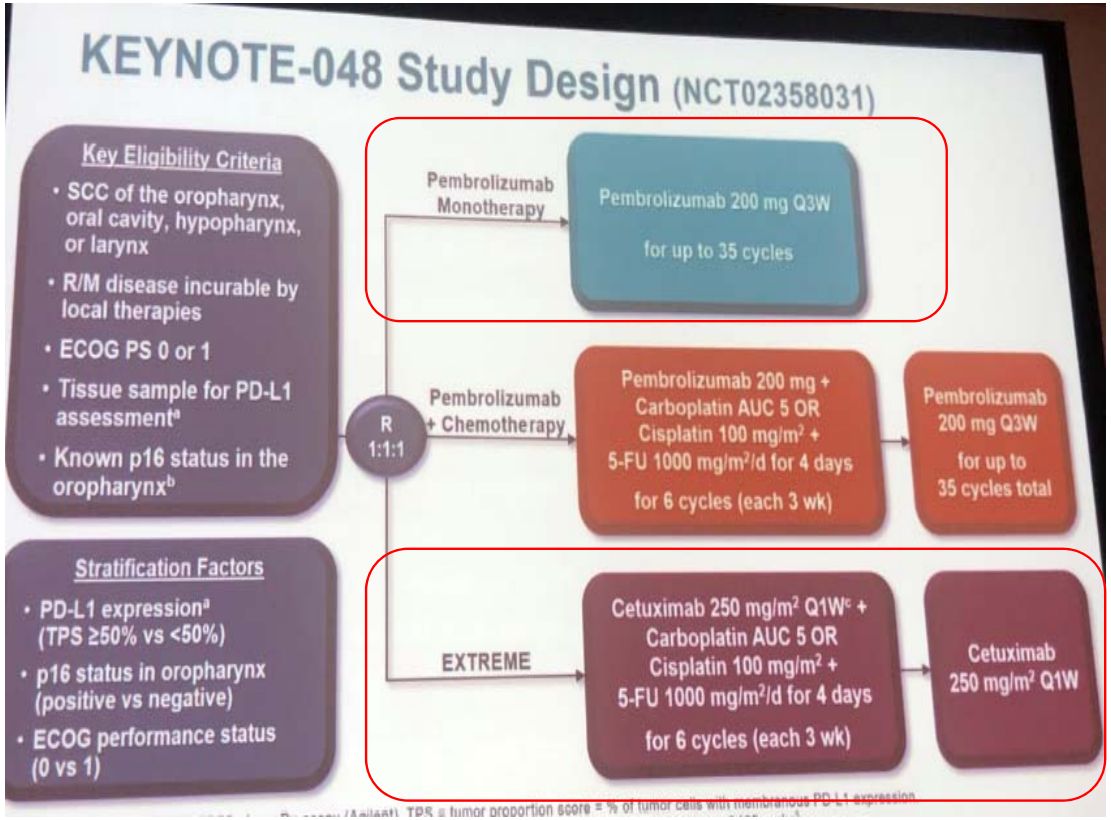
OS benefit in

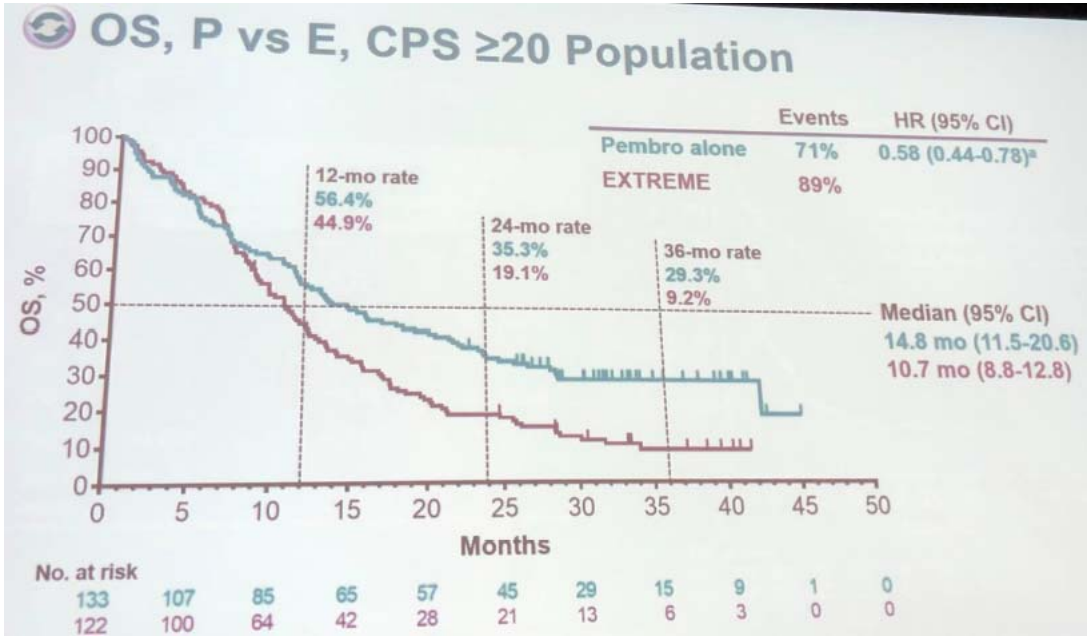
- CPS ≥ 20 (HR=0.60)
- CPS ≥ 1 (HR=0.65)
- ITT (HR=0.72)

Bristol-Myers Squibb

Rischin et al. ASCO 2019

1L H&N, Keynote-048, Overall Survival Pembro mono





OS benefit in
- CPS ≥ 20 (HR=0.58)
- CPS ≥ 1 (HR=0.74)

Bristol-Myers Squibb

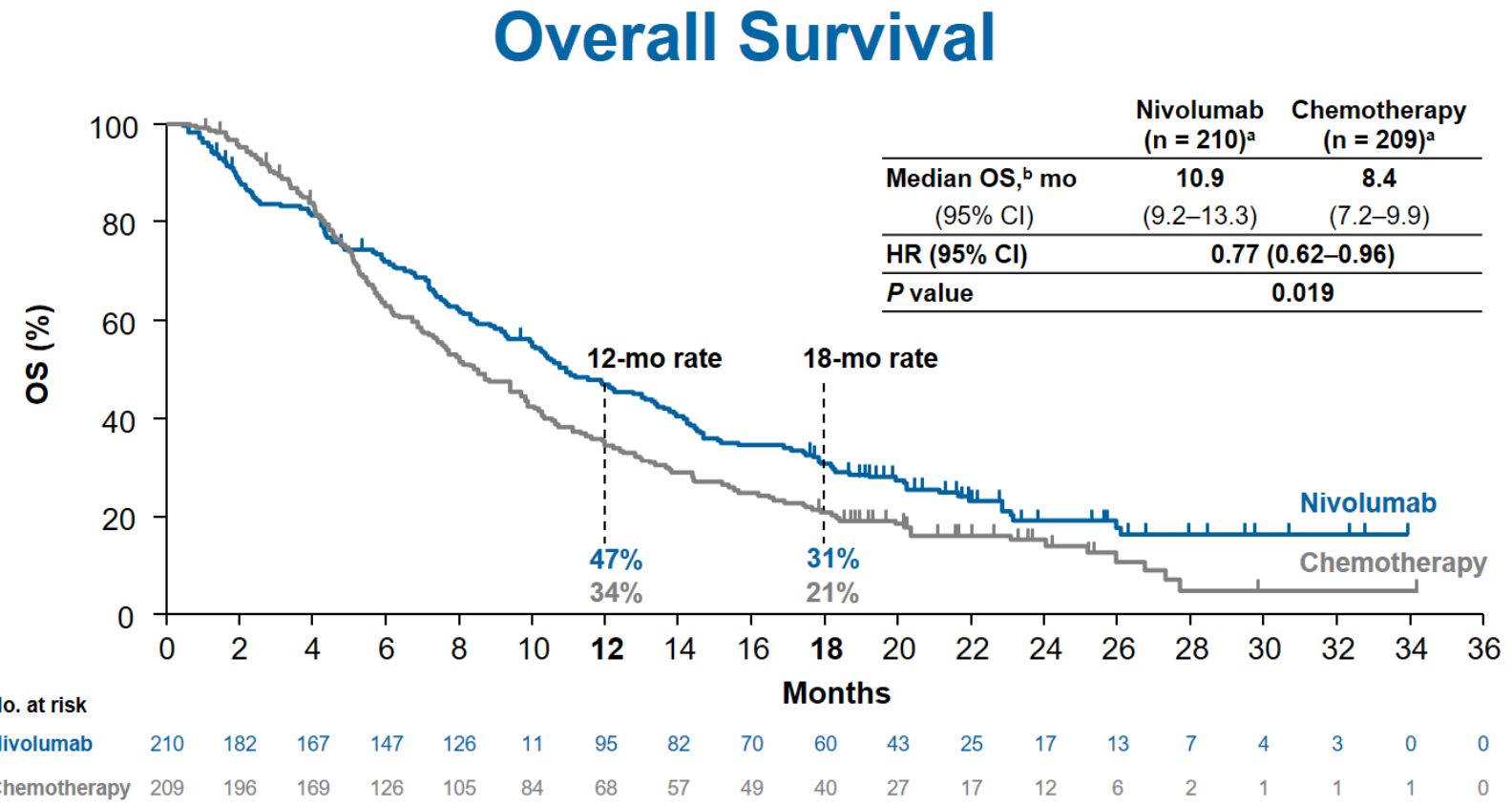
Rischin et al. ASCO 2019

Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Speiseröhrenkrebs

Bristol-Myers Squibb

2L ESCC, ATTRACTION-3, Overall Survival

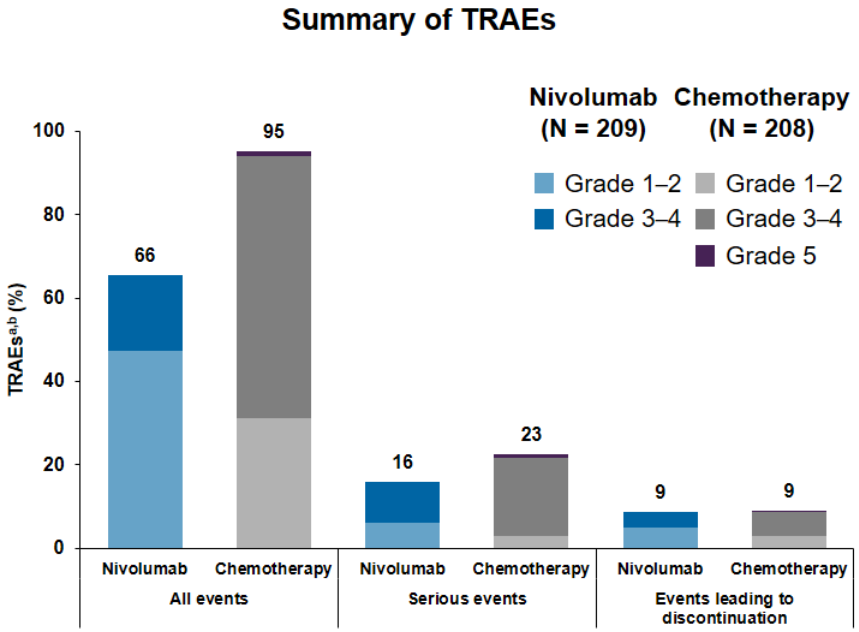


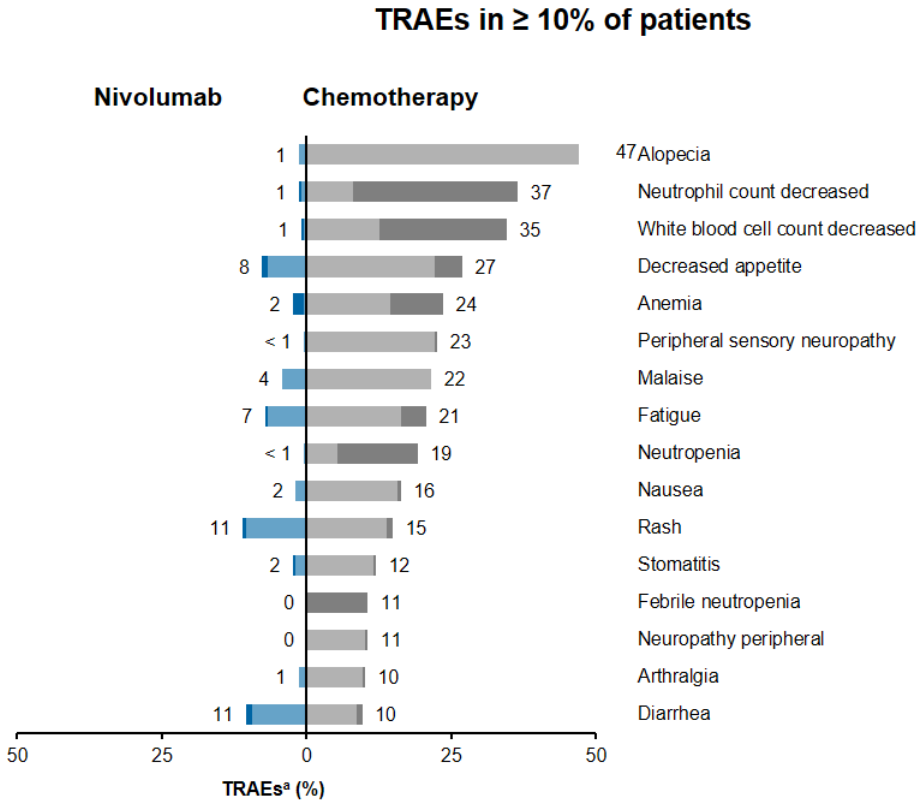
docetaxel or paclitaxel

- Nivolumab provided superior OS, with a 23% reduction in the risk of death and a 2.5-month improvement in median OS, versus chemotherapy

Chul Cho et al. ESMO 2019

2L ESCC, ATTRACTION-3, Verträglichkeit

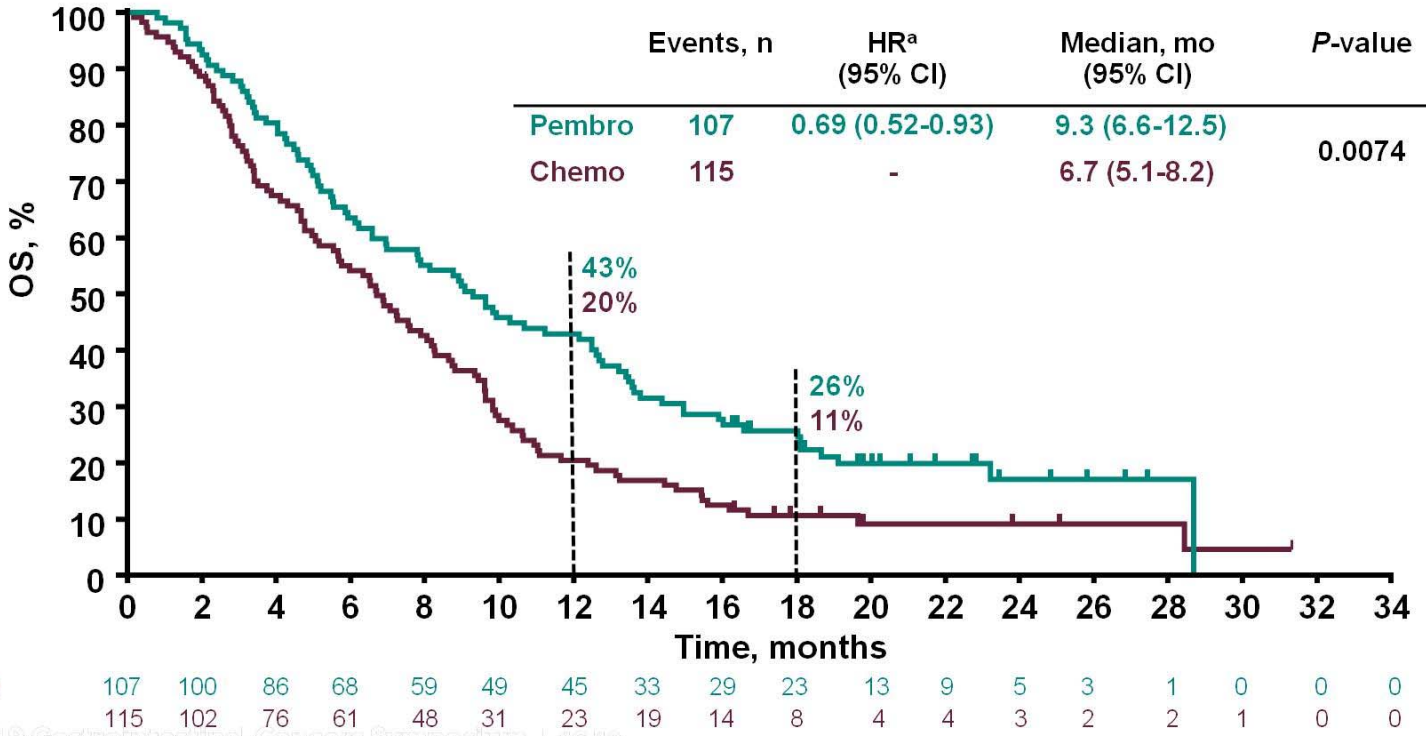




Chul Cho et al. ESMO 2019 Fewer TRAEs were reported with nivolumab versus chemotherapy

2L ESCC & EAC, Keynote-181, Overall Survival

Overall Survival (PD-L1 CPS ≥10)



	Events, n	HR[a] (95% CI)	Median, mo (95% CI)	*P*-value
Pembro	107	0.69 (0.52-0.93)	9.3 (6.6-12.5)	0.0074
Chemo	115	-	6.7 (5.1-8.2)	

[a]Based on Cox regression model with treatment as a covariate stratified by region and histology.
Data cutoff: October 15, 2018.

Overall survival in

1. Patients with PD-L1 CPS ≥10 ✓
2. Patients with SCC
3. All patients (ITT)

Kojimaet al. ASCO GI 2019

docetaxel or paclitaxel or irinotecan

2L ESCC & EAC, Keynote-181, AEs

Summary of Adverse Events

Event	Pembrolizumab N = 314		Chemotherapy N = 296	
Any treatment-related, n (%)	202 (64.3)		255 (86.1)	
Grade 3-5	57 (18.2)		121 (40.9)	
Led to discontinuation	19 (6.1)		19 (6.4)	
Led to death[a]	5 (1.5)		5 (1.7)	
Immune-mediated and infusion reactions	73 (23.2)		22 (7.4)	
≥20% treatment-related events any group, n (%)	All grade	Grade 3-5	All grade	Grade 3-5
Fatigue	37 (11.8)	2 (0.6)	61 (20.6)	1 (0.3)
Nausea	22 (7.0)	0	64 (21.6)	7 (2.4)
Diarrhea	17 (5.4)	2 (0.6)	60 (20.3)	9 (3.0)
Anemia	8 (2.5)	4 (1.3)	85 (28.7)	23 (7.8)

[a]Myocarditis, death, decreased white blood cell count (n=1 each) and pneumonitis (n=2) in the pembrolizumab group and pneumonia, pneumonia aspiration, sepsis, decreased neutrophil count, and hemorrhagic shock (n=1 each) in chemotherapy group.
Data cutoff: October 15, 2018.

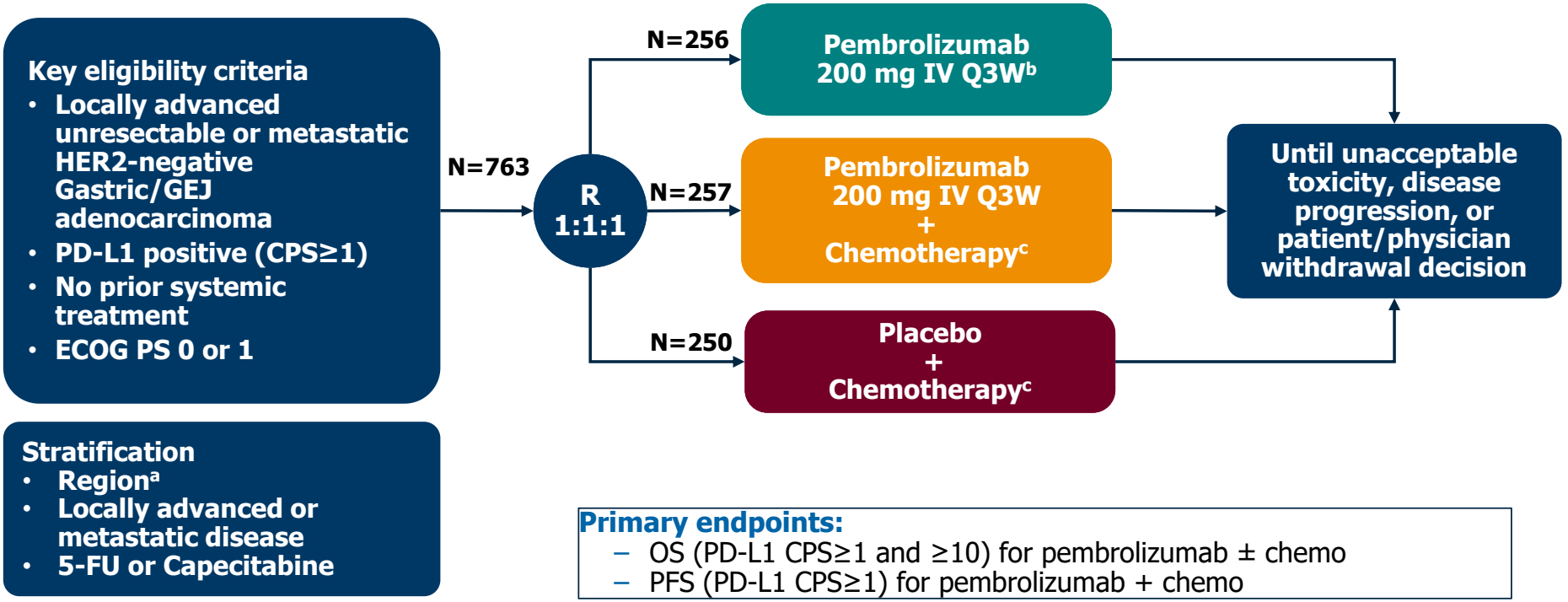
Kojimaet al. ASCO GI 2019

Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Magenkrebs

Bristol-Myers Squibb

1L GC/GEJ, Keynote-062, CPS ≥1, study design



Primary endpoints:
- OS (PD-L1 CPS≥1 and ≥10) for pembrolizumab ± chemo
- PFS (PD-L1 CPS≥1) for pembrolizumab + chemo

Tabanero et al. ASCO 2019

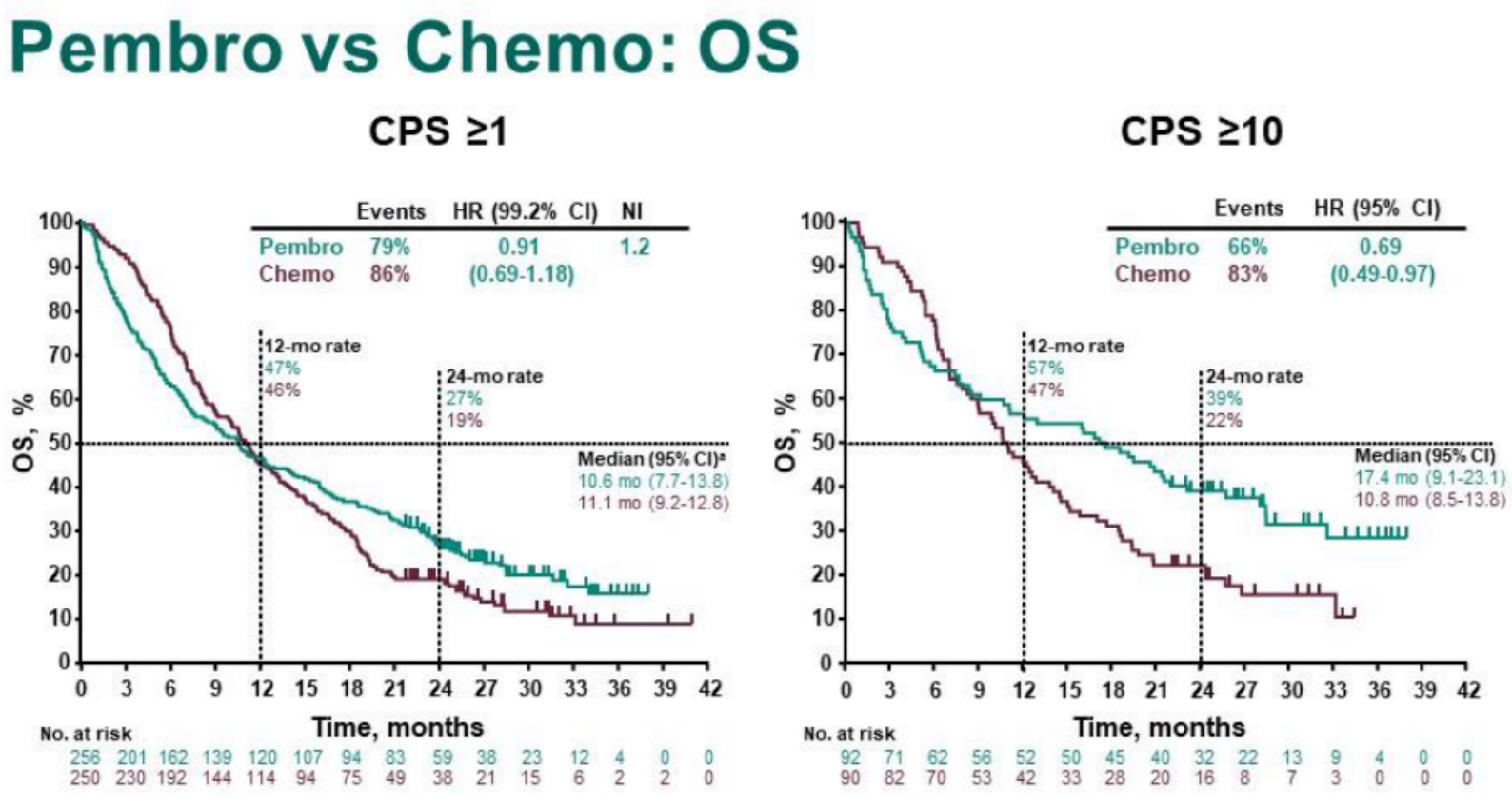
Cisplatin + 5-FU or Capecitabine

Bristol-Myers Squibb

1L GC/GEJ, Keynote-062, OS Pembro Mono

Pembro mono:

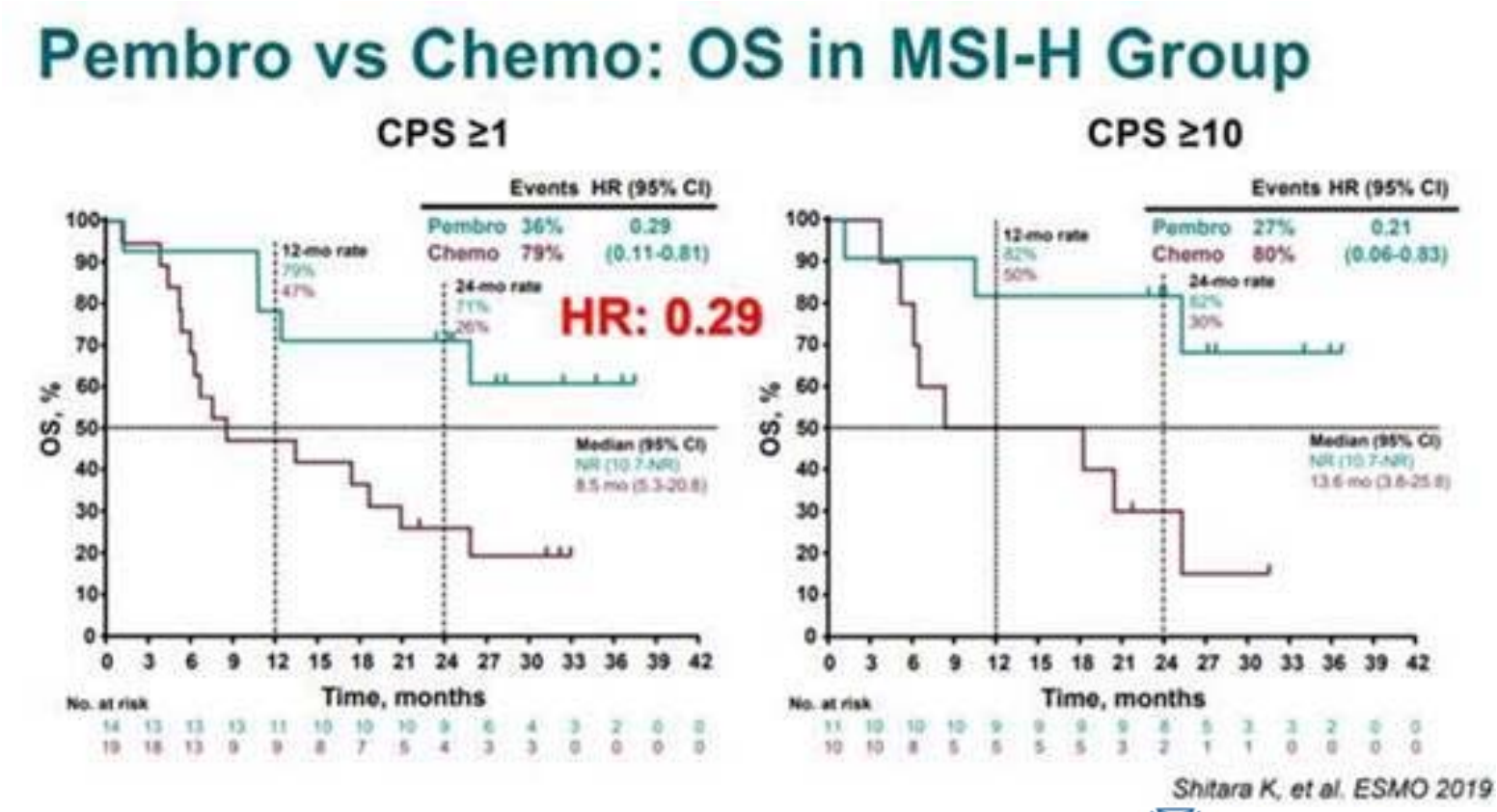
- Non-inferior in CPS ≥1
- Superior in CPS ≥10



Tabanero et al. ASCO 2019

NI, non-inferiority margin. aHR (95% CI), 0.91 (0.74-1.10), $P = 0.162$ for superiority of pembro vs chemo Data cutoff: March 26, 2019.

1L GC/GEJ Keynote-062, OS Pembro Mono, MSI-H



Shitara K, et al. ESMO 2019

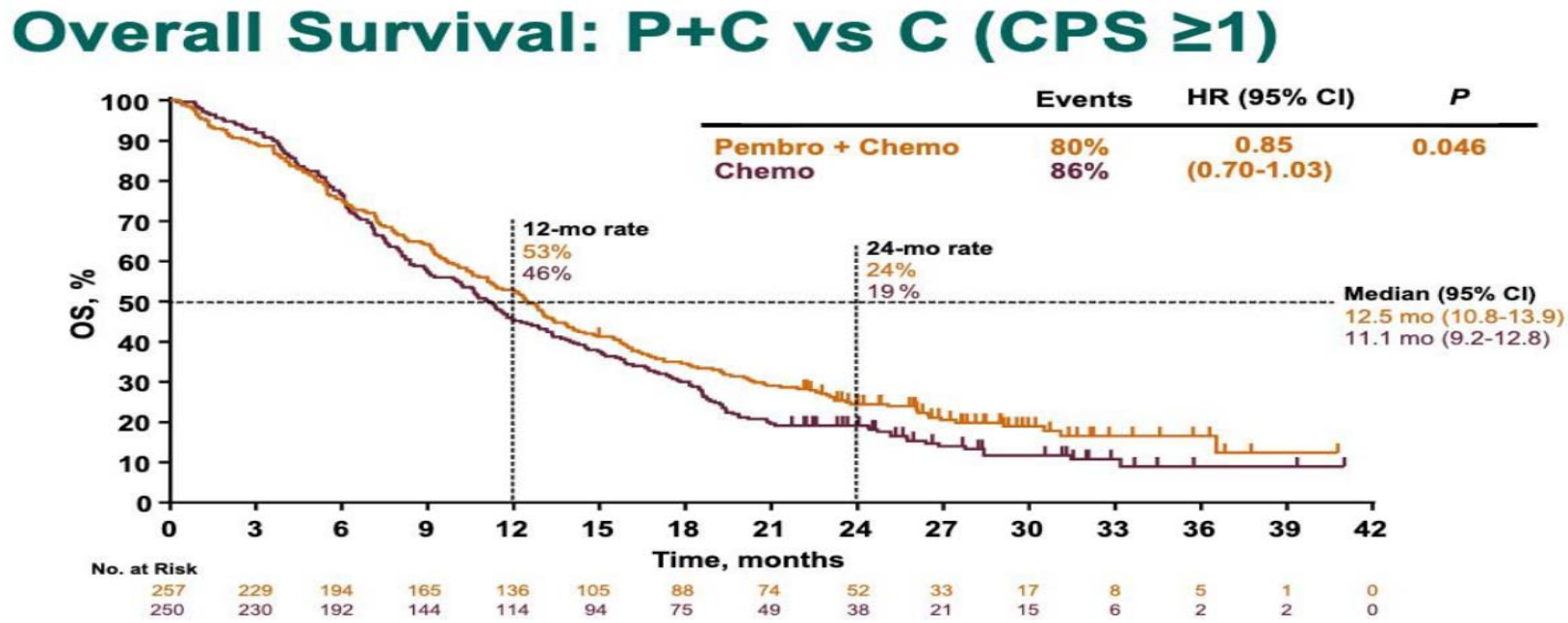
Bristol-Myers Squibb

Shitara et al. ESMO 2019

1L GC/GEJ Keynote-062, OS Pembro + Chemo

Pembro + Chemo:

- Non-superior in CPS ≥1
- Non-superior in CPS ≥10



Tabanero et al. ASCO 2019

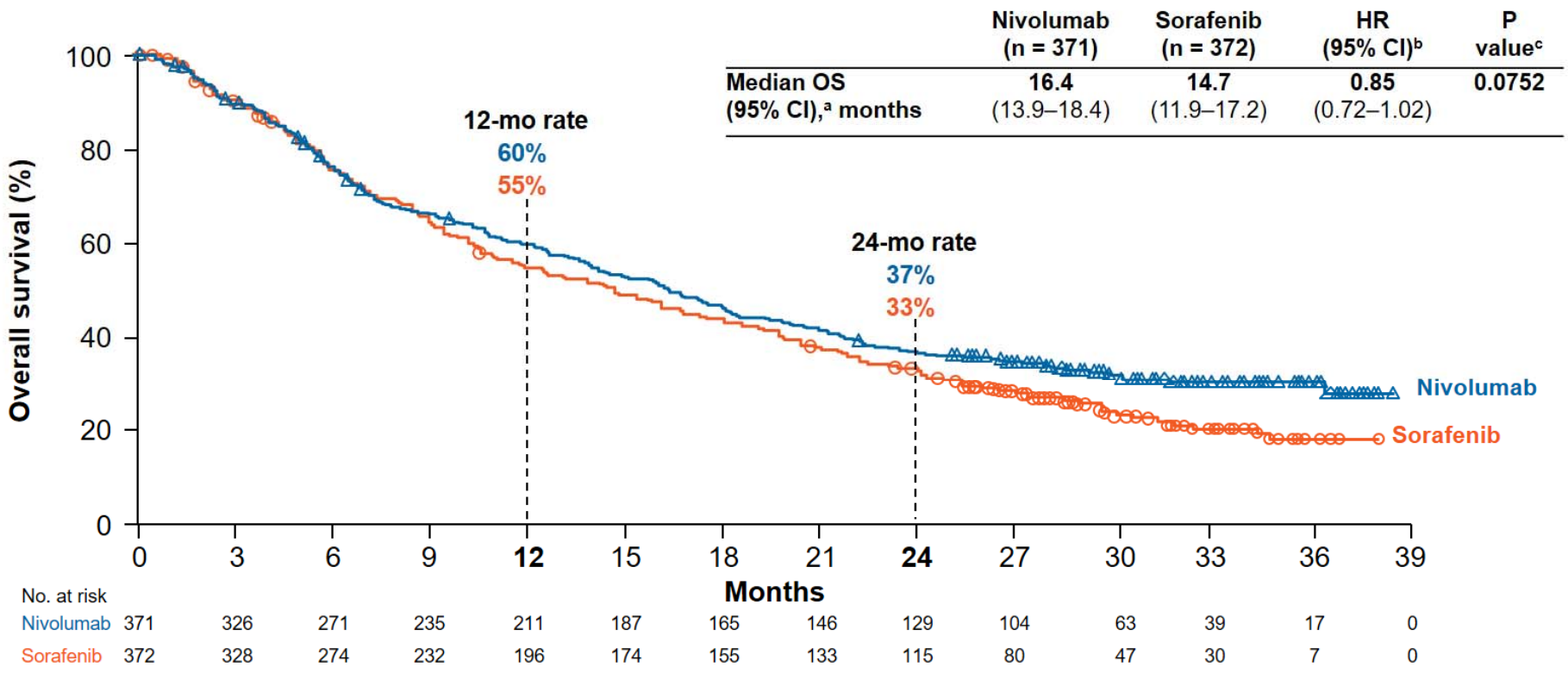
Bristol-Myers Squibb

Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Hepatozelluläres Karzinom

Bristol-Myers Squibb

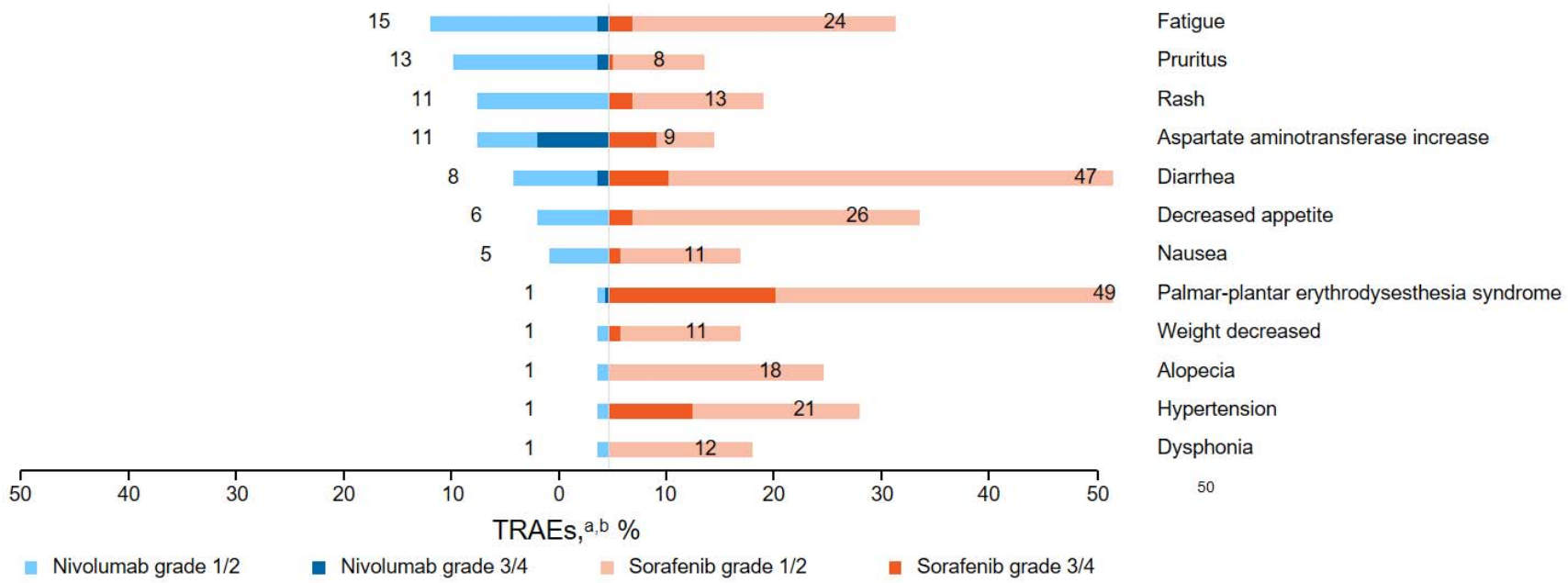
1L, HCC, CheckMate-459, Overall Survival



- The predefined threshold of statistical significance for OS with nivolumab was not met, although nivolumab demonstrated clinical benefit

Yau et al. ESMO 2019

1L, HCC, CheckMate-459, Nebenwirkungsprofil



- Nivolumab demonstrated an improved safety profile compared with sorafenib, with fewer grade 3/4 TRAEs and TRAEs leading to discontinuation versus sorafenib
  - Grade 3/4 TRAEs were reported in 81 patients (22%) in the nivolumab arm and 179 patients (49%) in the sorafenib arm

Yau et al. ESMO 2019

Zusammenfassung und Ausblick

Trends in I-O

- 1. Welle der Monotherapien am Auslaufen (LC, EC, HCC)
- 2. Welle der 1L Kombinationstherapien am Etablieren (LC, TNBC, UC, H&N, GC, RCC)
- 3. Welle der (neo)adjuvanten Therapien am Entstehen (MEL)

Bristol-Myers Squibb

Zusammenfassung und Ausblick

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Nicht alles Gold was glänzt!

- Negative Ph III Studien (LC, TNBC, GBM, GI)
- Wo bleibt die personalisierte I-O Therapie?

Bristol-Myers Squibb

Zusammenfassung und Ausblick

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Ausblick

- Vielzahl an Ph III Studien und Zulassungen in den nächsten Jahren
- Biomarker, Sequenzierung, Resistenz, Mikrobiom, next generation I-O

Bristol-Myers Squibb

Immunonkologische Highlights des Jahres 2019 & Ausblick auf 2020

Österreichische Gesellschaft für Krankenhauspharmazie
Herbstmeeting 2019

Mag. Markus Krenn
Disease Area Specialist Immuno-Oncolgoy

Bristol-Myers Squibb