

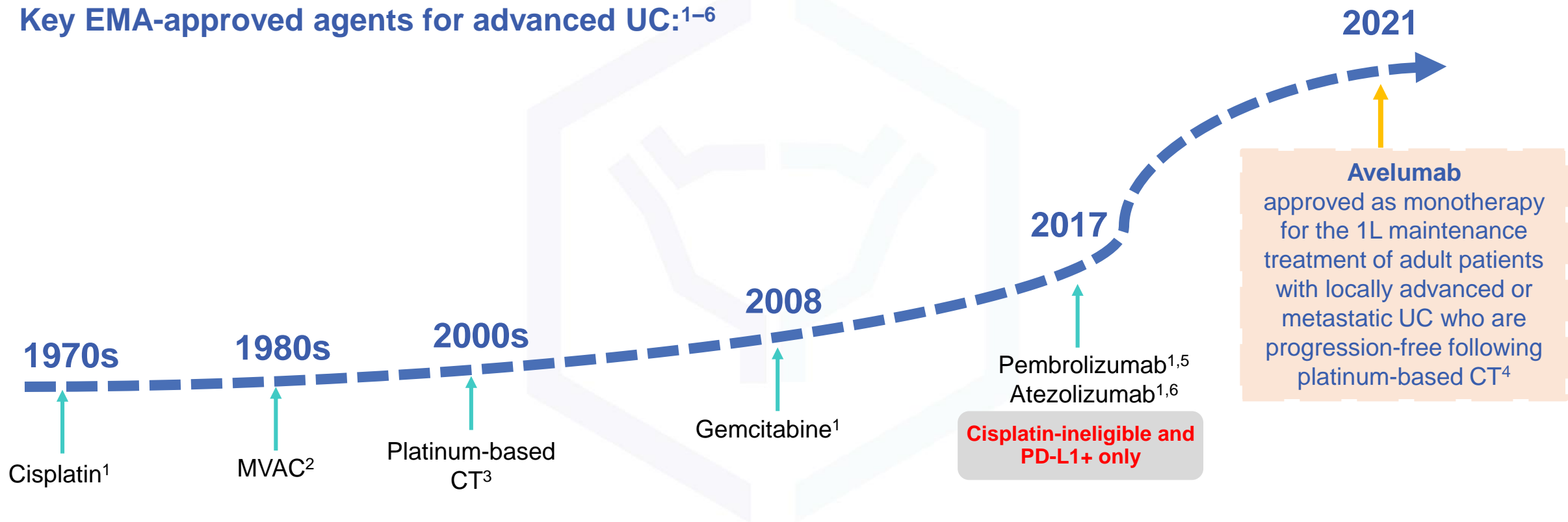
Overall survival at its core: The new ABC (Avelumab in Bladder Cancer)

Dr Mohit Agarwal
Fortis Hospital, Delhi

Timeline: Approved 1L therapies for advanced UC

Platinum-based CT has been the 1L SOC for eligible patients for two decades¹⁻³
After platinum-based CT, BAVENCIO® (avelumab) can now be given as 1L maintenance treatment⁴

Key EMA-approved agents for advanced UC:¹⁻⁶



1L, first-line; CT, chemotherapy; EMA, European Medicines Agency; MVAC, methotrexate, vinblastine, doxorubicin, and cisplatin; PD-L1, programmed death-ligand 1; SOC, standard of care; UC, urothelial carcinoma.

1. Pichler R, et al. *memo - Magazine of European Medical Oncology*;2021;14:70-5; 2. Sternberg CN, et al. *Cancer*;1989;64:2448-58; 3. Koufopoulou M, et al. *Cancer Treat Rev*;2020;89:102072; 4. BAVENCIO® Summary of Product Characteristics, 2021; 5. KEYTRUDA® Summary of Product Characteristics, 2021; 6. TECENTRIQ® Summary of Product Characteristics, 2021.

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Pfizer

Patient segments in 1L mUC

Patient



Cisplatin eligible



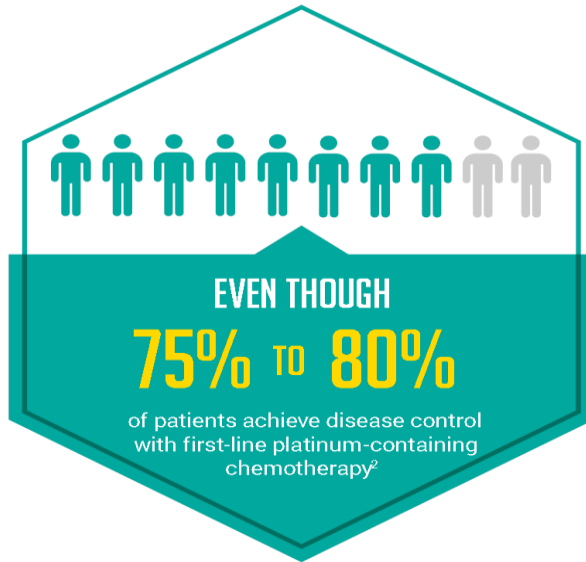
Cisplatin ineligible



Platinum ineligible

Majority of the patients receive platinum-based therapy

Urothelial Cancer - For over 20 years, platinum-containing chemotherapy has been the standard of care because of its high initial response rate, but with limitations.



of patients progress within^{2,5-6}
9 MONTHS



of patients do not receive second-line therapy^{4,7-9}

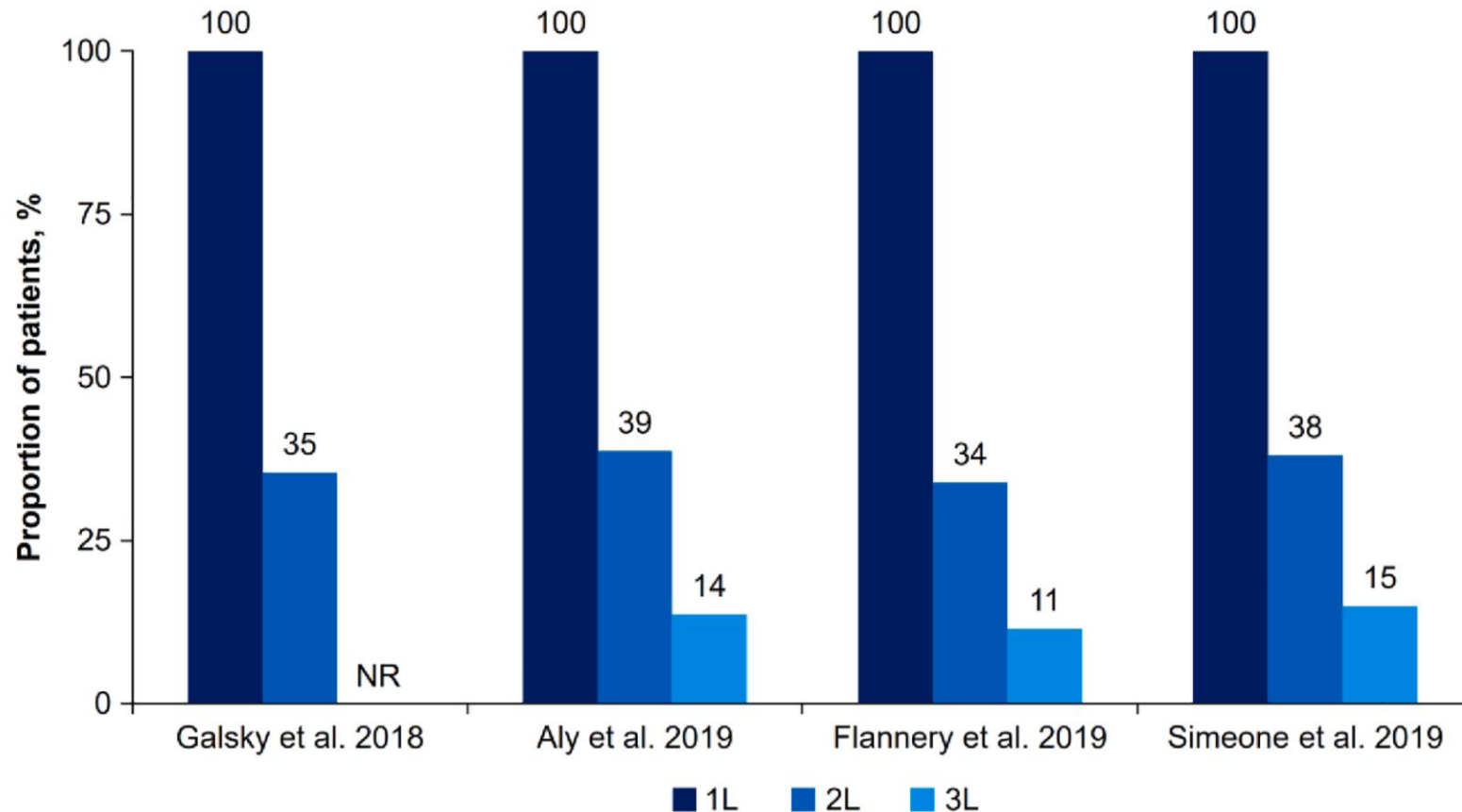


2. Powles T, Park SH, Voog E, et al. Avelumab maintenance therapy for advanced or metastatic urothelial carcinoma. N Engl J Med. 2020;383(13):1218-1230. doi:10.1056/NEJMoa2002788.; 3. Powles T, Park SH, Voog E, et al. Maintenance avelumab + best supportive care (BSC) versus BSC alone after platinum-based first-line chemotherapy in advanced urothelial carcinoma: JAVELIN Bladder 100 phase III results [Abstract LBA1]. Presented at: American Society of Clinical Oncology (ASCO) 2020 Virtual Annual Meeting; May 29 to June 2, 2020.; 4. Niegisch G, Gerullis H, Lin S-W, et al. A real-world data study to evaluate treatment patterns, clinical characteristics and survival outcomes for first- and second-line treatment in locally advanced and metastatic urothelial cancer patients in Germany. J Cancer. 2018;9(8):1337-1348.; 5. Bukhari N, Al-Shamsi HO, Azam F. Update on the treatment of metastatic urothelial carcinoma. Hindawi Sci World J. 2018;5682078:1-7. doi.org/10.1155/2018/5682078.; 6. Von der Maase H, Hansen SW, Roberts JT, et al. Gemcitabine and cisplatin versus methotrexate, vinblastine, doxorubicin, and cisplatin in advanced or metastatic bladder cancer: results of a large, randomized, multinational, multicenter, phase III study. J Clin Oncol. 2000;17(17):3068-3077.; 7. Cheeseman S, Thompson M, Sopwith W, et al. Current treatment and outcomes benchmark for locally advanced or metastatic urothelial cancer from a large UK-based single centre. Front Oncol. 2020;10:167. doi:10.3389/fonc.2020.00167.; 8. Galsky MD, Pal SK, Lin S-W, et al. Real-world effectiveness of chemotherapy in elderly patients with metastatic bladder cancer in the United States. Bladder Cancer. 2018;4(2):227-238.; 9. Aly A, Johnson C, Yang S, Botteman MF, Rao S, Hussain A. Overall survival, costs, and healthcare resource use by line of therapy in Medicare patients with newly diagnosed metastatic urothelial carcinoma. J Med Econ. 2019 Jul;22(7):662-670.

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Patient attrition between first-line therapy and later lines of therapy in real-world studies in mUC



Optimizing 1L therapy is very important in aggressive disease like mUC

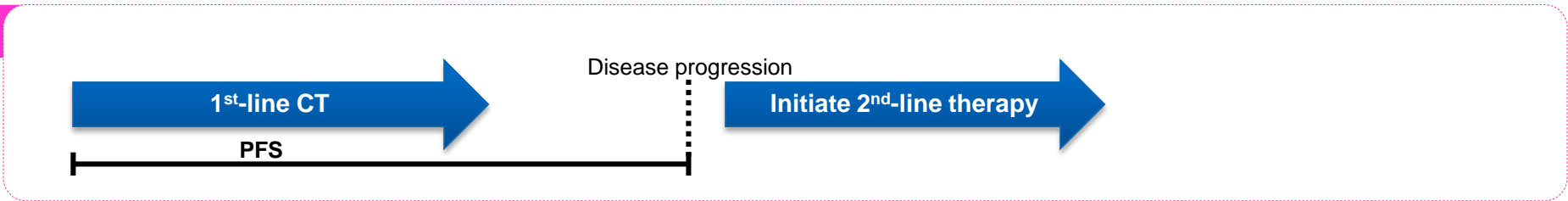
Treatment approaches to maximize OS

Cisplatin eligible

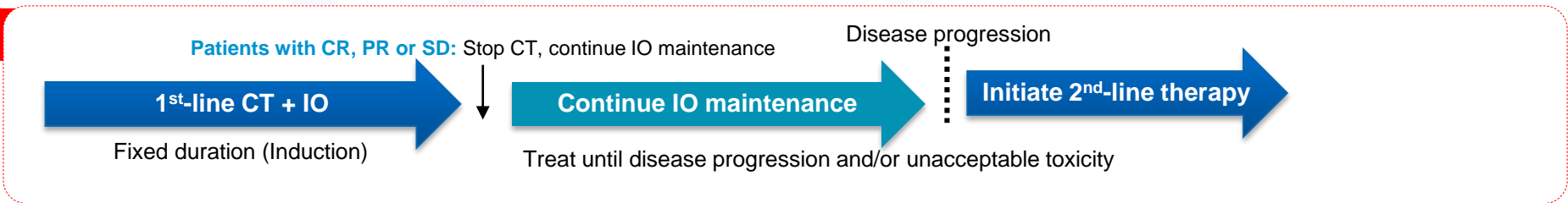
and

Carboplatin eligible

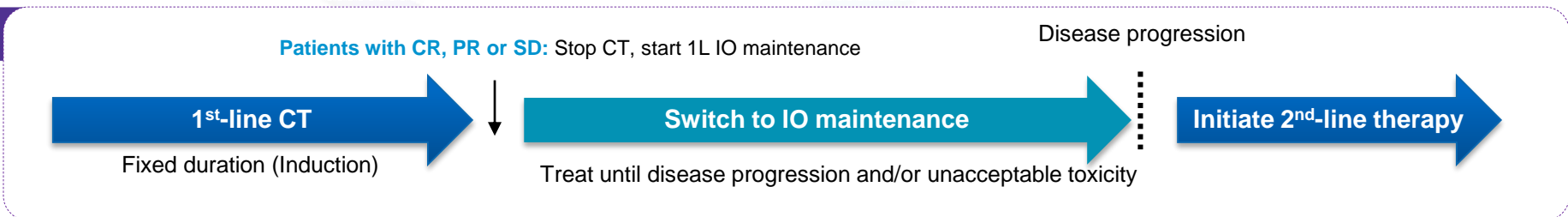
Wait and watch



Continuation maintenance



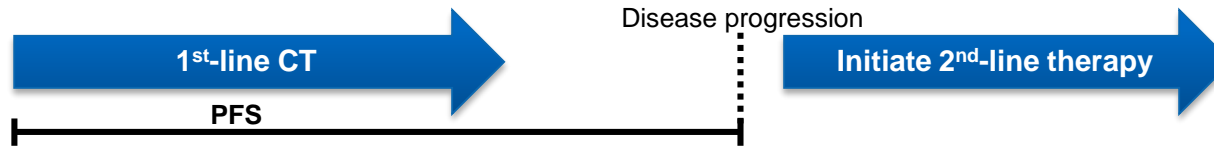
Switch maintenance



Wait and watch approach-

1L platinum-based CT (ORR: ~40–50%; DCR: ~50–80%) but mOS remains around 15 months

Wait and watch



50 to 80%

of patients achieve disease control with 1L platinum-based CT^{3,4}

However, OS is limited by CT resistance²



Median OS

Cisplatin-based CT 14 to 15 months^{3,5}

Carboplatin-based CT 13 to 14 months^{6,7}

1L, first-line; CT, chemotherapy; OS, overall survival; SOC, standard of care; UC, urothelial carcinoma.
1. Niegisch G, et al. *J Cancer*;2018;9(8):1337–48; 2. Grivas P, et al. *Target Oncol*;2019;14(5):505–25;
3. von der Maase H, et al. *J Clin Oncol*;2000;17(17):3068–77; 4. De Santis M, et al. *J Clin Oncol*;2012;30(2):191–199;
5. von der Maase H, et al. *J Clin Oncol*;2005;23(21):4602–8; 6. Powles T, et al. *Lancet Oncol*. 2021 Jul;22(7):931-945;
7. Galsky MD, et al. *Lancet*. 2020 May 16;395(10236):1547-1557

Cross-trial comparisons should not be made due to differences in trial design

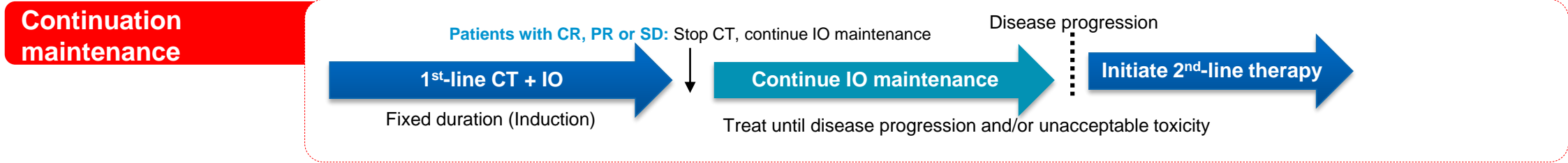
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Continuation maintenance approach-

None of the IO+CT or IO+IO studies provides mOS benefits in these difficult to treat patients



	IMvigor130 ¹	KEYNOTE-361 ²	DANUBE ³
Treatment strategy	CT + IO	CT + IO	IO doublet
Experimental agents	Atezolizumab + platinum-based CT	Pembrolizumab + platinum-based CT	Durvalumab + tremelimumab
Status	Awaiting final results	Negative trial	Negative trial
Outcome	No significant difference in OS at 2 nd interim analysis (AACR 2021)	Did not meet OS or PFS primary endpoints (ESMO 2020)	Did not meet OS endpoints (ESMO 2020)

CT, chemotherapy; IO, immunotherapy; CR, complete remission; PR, partial remission; SD, stable disease; PFS, progression free survival

1. Galsky MD, et al. Lancet Oncol;2021;395:1547-57
 2. Powles T, et al. Lancet Oncol; 2021; 22(7), 931-945
 3. Powles T, et al. Lancet Oncol; 2020; 21; 1574-1588

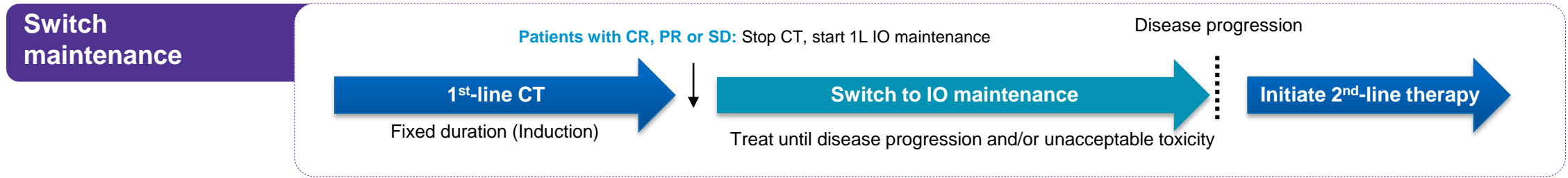
Cross-trial comparisons should not be made due to differences in trial design

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Switch Maintenance-

JAVELIN Bladder 100 the only phase III study demonstrates significant overall survival in UC maintenance setting



	JAVELIN Bladder 100 (Ph III) ¹	GU14-182 (Ph II) ²
Treatment strategy	CT >> IO maintenance	CT >> IO maintenance
Experimental agents	Avelumab	Pembrolizumab
mOS benefit	Significant benefit vs no maintenance	Non-significant benefit vs no maintenance

CT, chemotherapy; IO, immunotherapy; CR, complete remission; PR, partial remission; SD, stable disease; PFS, progression free survival

1. Powles T, et al. N Engl J Med 2020;383:1218-30

2. Galsky MD, et al. J Clin Oncol; 2020; 38(16):1797-1806

Cross-trial comparisons should not be made due to differences in trial design

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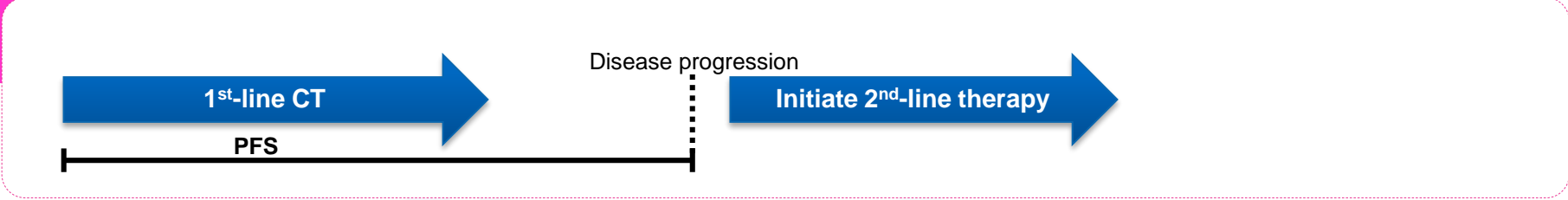
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Pfizer

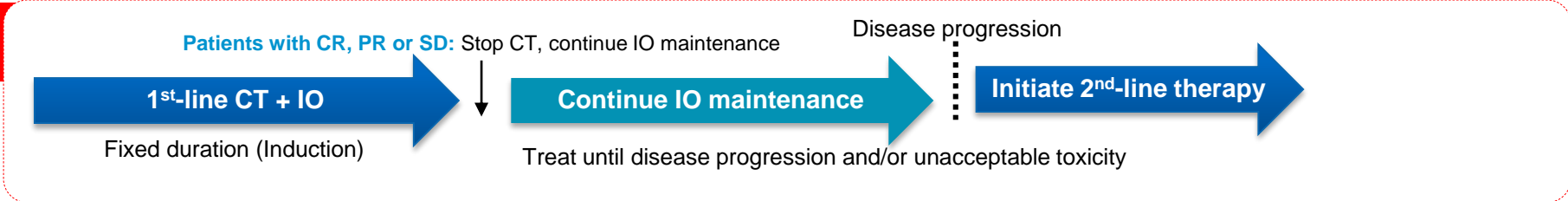
In unresectable LA or mUC platinum eligible patients



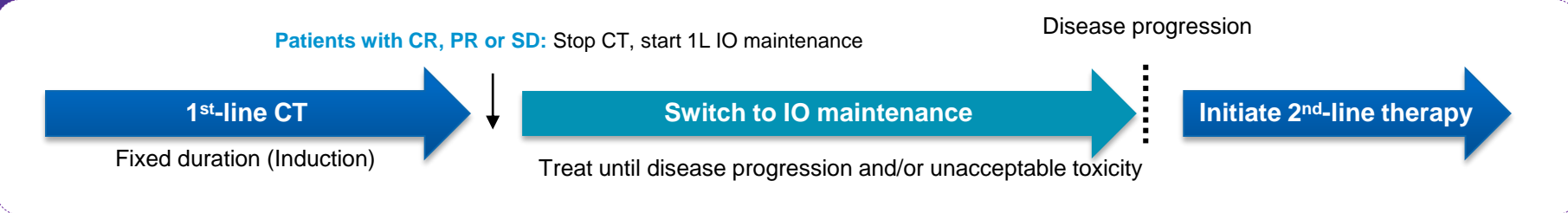
Wait and watch



Continuation maintenance



Switch maintenance

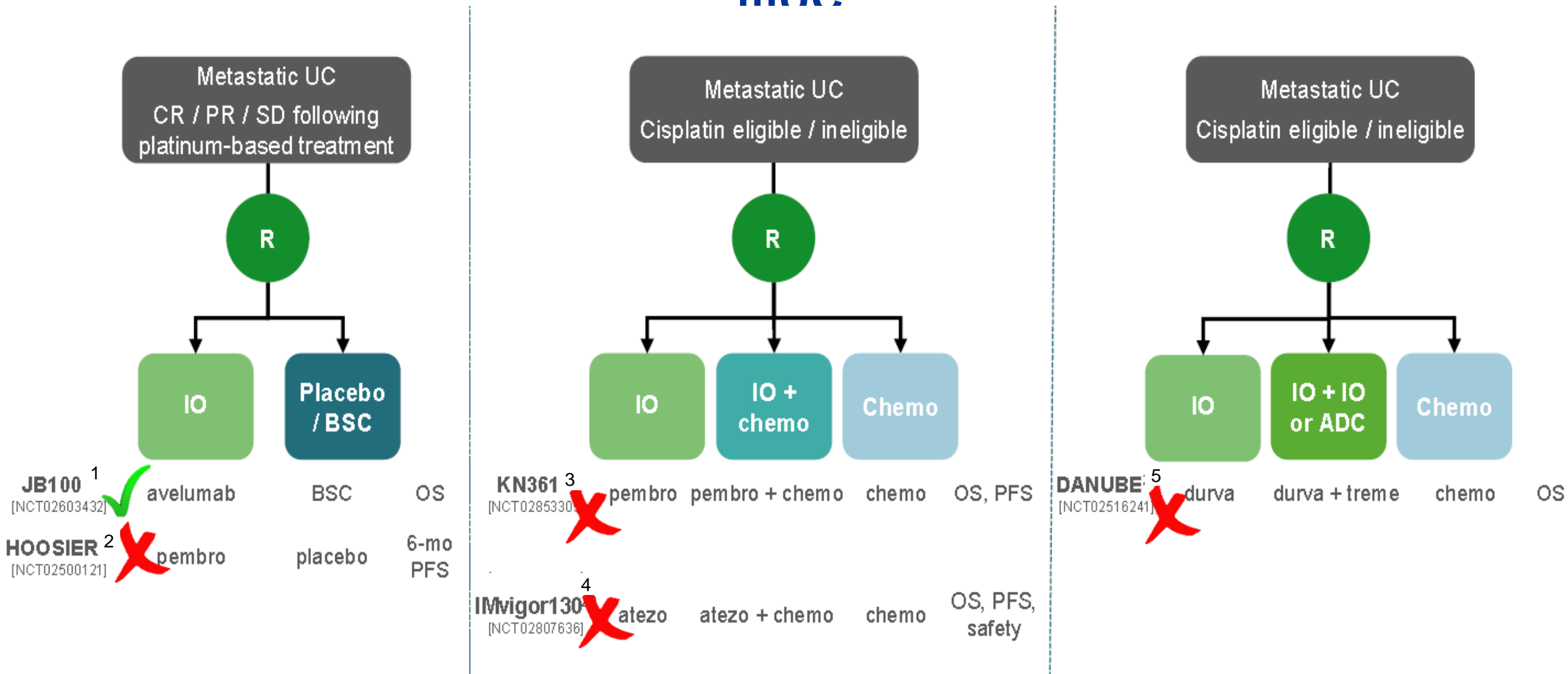


NEXT
 Only approach that has translated into maximizing mOS

CT, chemotherapy; IO, immunotherapy; CR, complete remission; PR, partial remission; SD, stable disease; PFS, progression free survival; mOS, median Overall survival; LA, locally advanced; mUC, metastatic urothelial carcinoma



Summary: Different strategies for Cisplatin/Carboplatin eligible mUC



✗ No significant OS benefit

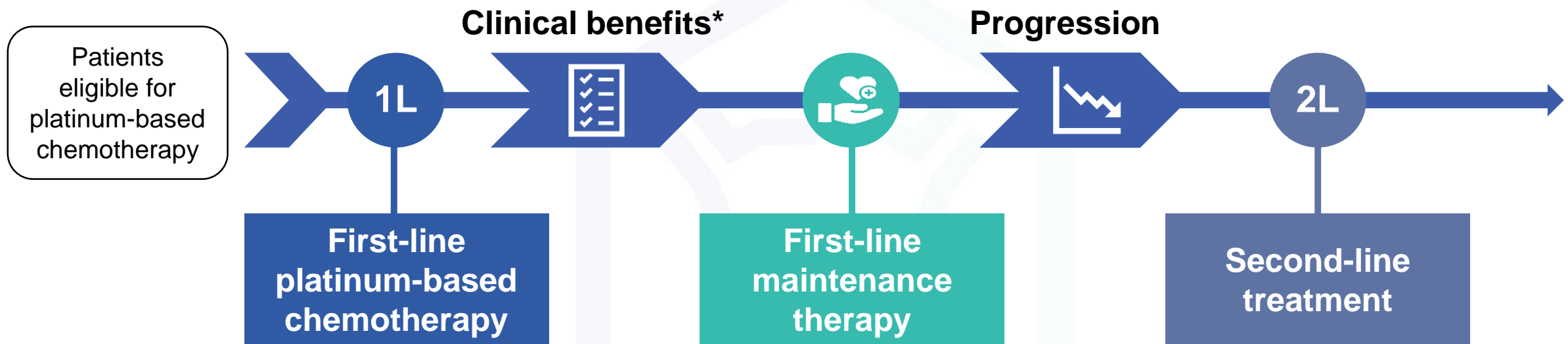
IO, immunotherapy; CR, complete remission; PR, partial remission; SD, stable disease; PFS, progression free survival; OS, overall survival
 1. Powles T, et al. N Engl J Med 2020;383:1218-30. 2. Galsky MD, et al. J Clin Oncol; 2020; 38(16):1797-1806
 3. Powles T, et al. Lancet Oncol; 2021; 22(7), 931-945. 4. Galsky MD, et al. Lancet Oncol;2021;395:1547-57
 5. Powles T, et al. Lancet Oncol; 2020; 21; 1574-1588

Cross-trial comparisons should not be made due to differences in trial design



Maintenance therapy introduces a treatment approach for patients who have a response or stable disease after first-line platinum-based chemotherapy^{1,2}

- Maintenance therapy can be given shortly after completion of the induction therapy in patients whose disease is not progressing and until disease progression or unacceptable toxicity, or for a fixed time period^{1,2}
- Unlike existing approved PD-L1 inhibitors for advanced UC, patients may be treated with first-line maintenance BAVENCIO[®] (avelumab) regardless of PD-L1 status; PD-L1 testing is not a requirement³



First-line maintenance with BAVENCIO[®] (avelumab) offers an alternative option to the ‘watch and wait’ approach in patients who are progression-free after first-line platinum-based chemotherapy³

*Clinical benefit includes complete response, partial response and stable disease.

1L, first line; 2L, second line; PD-L1, programmed cell death ligand 1; UC, urothelial carcinoma.

1. Freidlin B et al. *J Natl Cancer Inst* 2015;107:djv225; 2. Grivas P et al. *Target Oncol* 2019;14:505–525; 3. BAVENCIO India PI, June 2021

Maintenance therapy introduces a treatment approach that aims to prolong clinical responses and maintain the patient's quality of life¹



Work with the previous treatments¹

Preclinical data showed that IO therapy has a MoA that complements the MoA of chemotherapy.^{1,2} In addition, IO maintenance therapy may reinforce and sustain the clinical benefit of chemotherapy¹



Prolong the response¹

Clinical data demonstrated improved efficacy (prolonged OS and/or PFS) in patients treated with IO maintenance therapy compared with those not receiving maintenance therapy³⁻⁵

Maintain QoL¹

Prolonged chemotherapy can result in cumulative toxicity, which may affect an individual's QoL. An optimal maintenance therapy will maintain QoL¹

IO, immuno-oncology; MoA, mechanism of action; OS, overall survival; PFS, progression-free survival; QoL, quality of life.

1. Grivas P et al. *Target Oncol* 2019;14:505–525; 2. Kyi C, Postow MA. *Immunotherapy* 2016;8:821–837; 3. Galsky MD et al. *J Clin Oncol* 2020;38:1797–1806;

4. Antonia SJ et al. *N Engl J Med* 2017;377:1919–1929; 5. Moore K et al. *N Engl J Med* 2018;379:2495–2505.

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JAVELIN BLADDER 100 TRIAL

Overall efficacy and safety data

JAVELIN Bladder 100



Phase 3



370 Locations



Randomized



700 Patients



Open Label



**Locally Advanced or Metastatic
Urothelial Carcinoma**



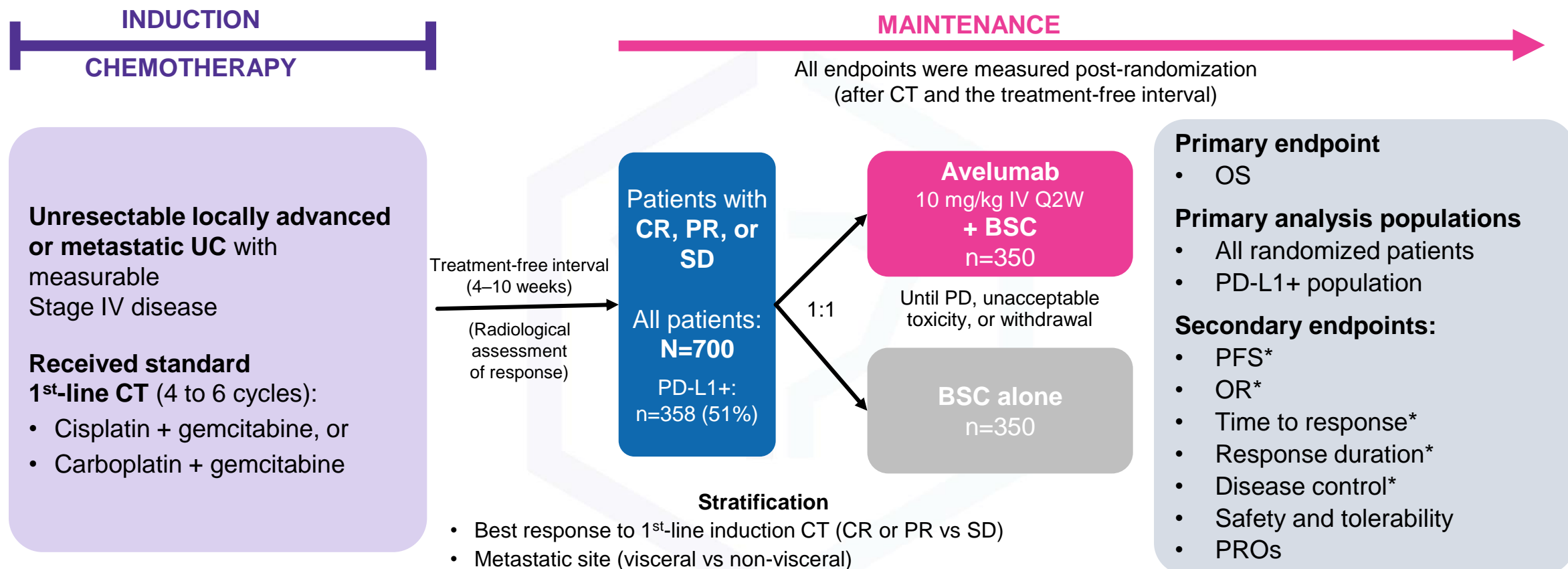
Parallel Arm



**Avelumab +BSC vs BSC As 1L
Maintenance Treatment After
1L PBCT**

JAVELIN Bladder 100

Phase III, randomized, open-label study^{1,2}

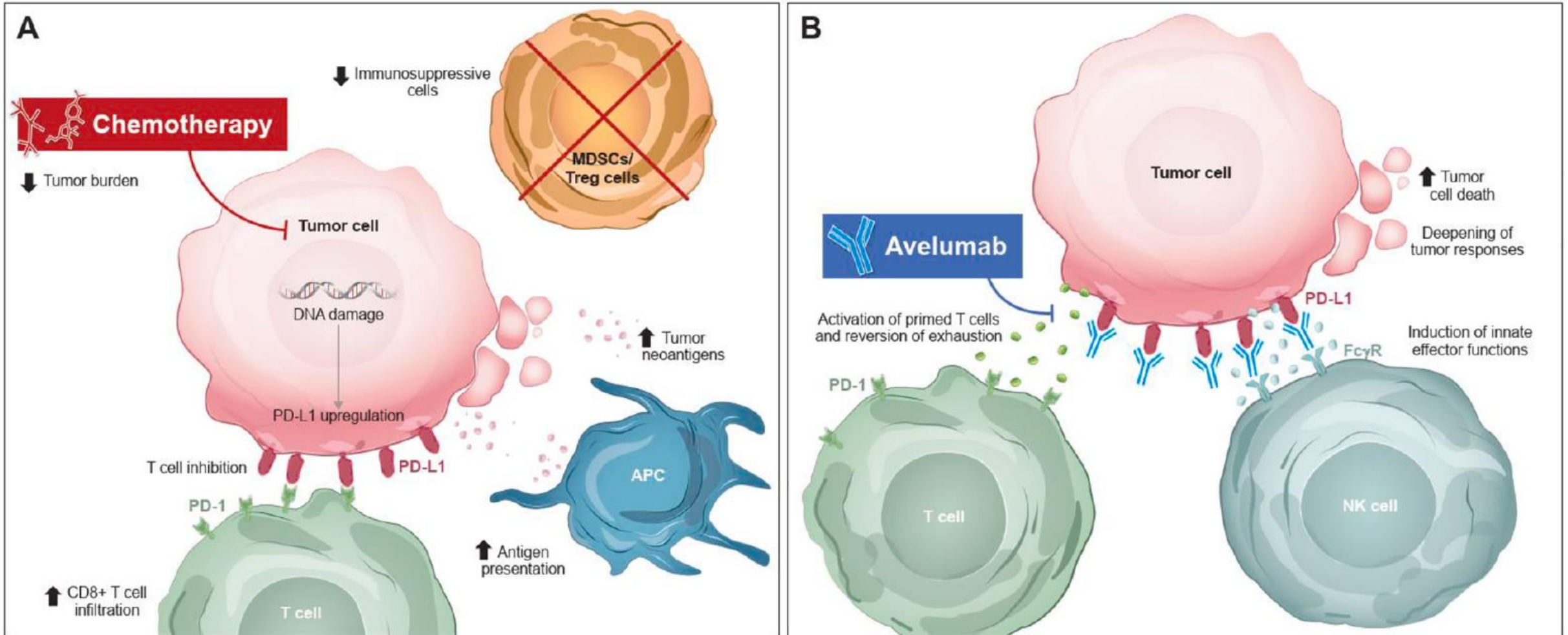


*Supportive care was administered per local practice based on patient needs and clinical judgment and included antibiotics, nutritional support, hydration, and pain management; other systemic antitumor therapy was not permitted, but palliative local radiotherapy for isolated lesions was acceptable. †Defined as response + stable disease for ≥6 weeks.

AE, adverse event; BICR, blinded independent central review; BSC, best supportive care; CR, complete response; CT, chemotherapy; IV, intravenous; OR, objective response; OS, overall survival; PD, progressive disease; PD-L1, programmed death-ligand 1; PFS, progression-free survival; PR, partial response; PRO, patient-reported outcomes; Q2W, every 2 weeks; RECIST, response evaluation criteria in solid tumors; SD, stable disease; UC, urothelial carcinoma.

1. Powles T, et al. N Engl J Med 2020;383:1218–30; 2. Powles T, et al. Oral presentation at ASCO 2020.

Scientific rationale

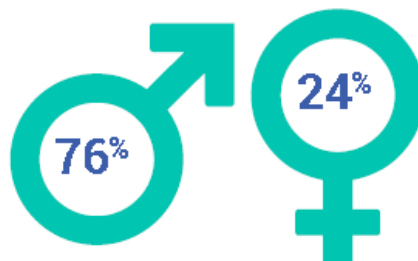


Baseline characteristics

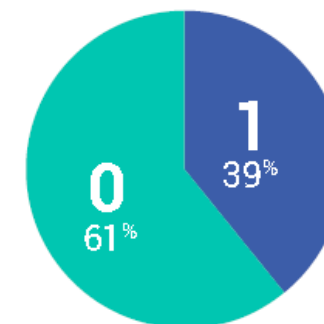
Median age



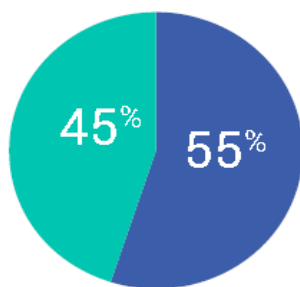
Gender



ECOG PS



Location of Metastasis

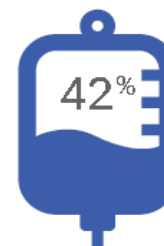


■ Non-visceral * ■ Visceral

First-line chemotherapy regimen:



Gemcitabine
+ cisplatin



Gemcitabine
+ carboplatin



Gemcitabine
+ cisplatin/carboplatin*

1. Powles T, et al. N Engl J Med 2020;383:1218–30; 2. Powles T, et al. Oral presentation at ASCO 2020.

Unprecedented OS benefit in overall population

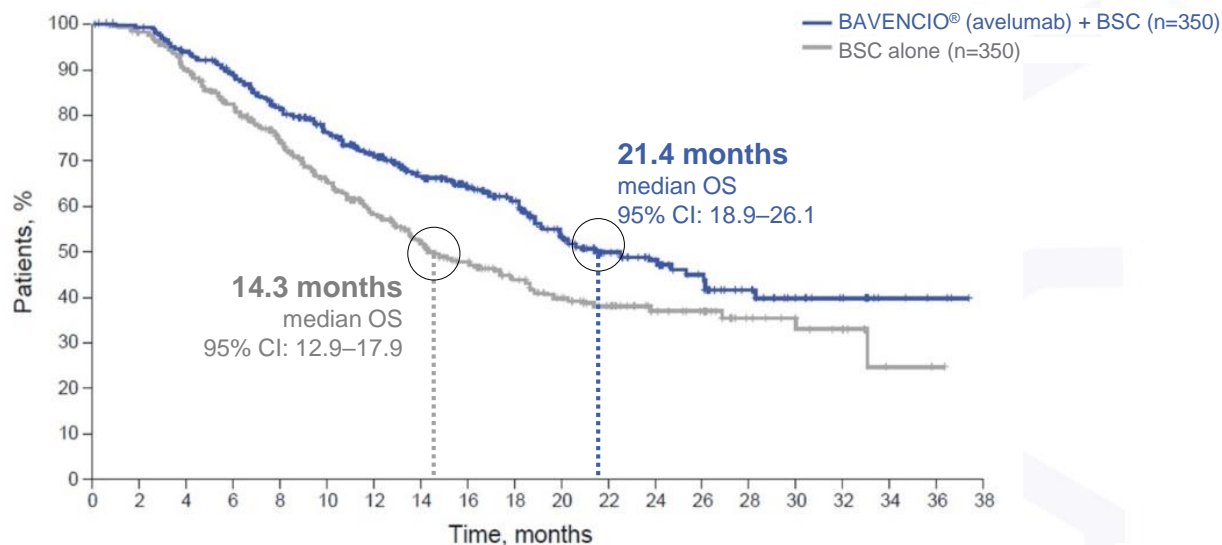


Primary Analysis

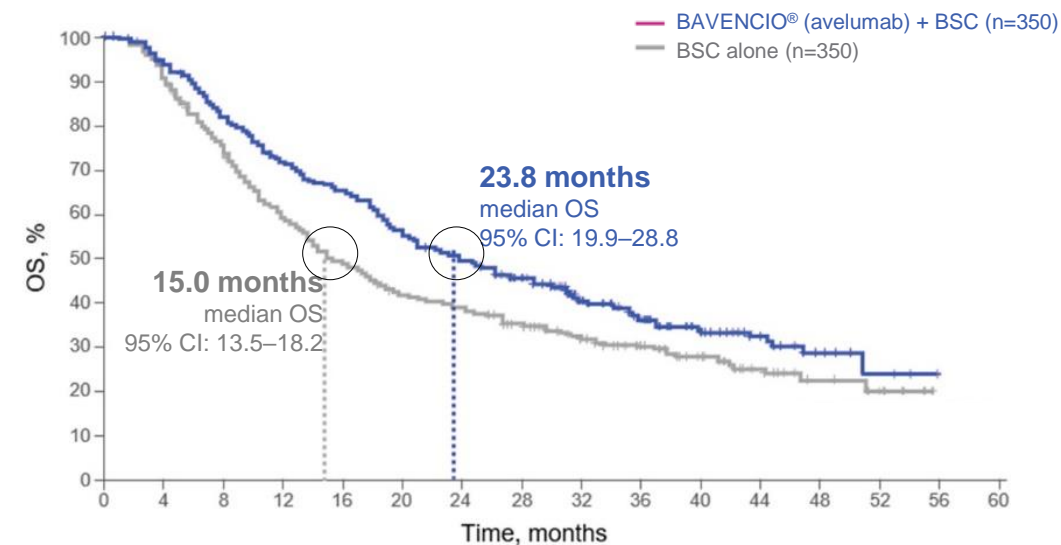
Primary endpoint. Data cut-off date: 21 October 2019*¹

Long Term Analysis

Primary endpoint. Data cut-off date: 4 June 2021†²



No. at risk	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
BAVENCIO® + BSC	350	342	318	294	259	226	196	167	145	122	87	65	51	39	26	15	11	5	3	0
BSC alone	350	335	304	270	228	186	153	125	105	83	68	55	41	33	18	12	9	2	1	0



No. at risk	0	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
BAVENCIO® + BSC	350	318	274	237	216	183	164	140	99	74	53	31	13	4	1	0
BSC alone	350	304	243	190	158	131	121	103	82	62	46	27	10	7	0	

Stratified HR for death: 0.69¹
(95% CI: 0.56–0.86)
p=0.001

7.1 months¹
improvement in median OS in patients receiving BAVENCIO® (avelumab) + BSC vs BSC alone

Stratified HR for death: 0.76²
(95% CI: 0.631–0.915)
p=0.0036

8.8 months²
improvement in median OS in patients receiving BAVENCIO® (avelumab) + BSC vs BSC alone

*Data cut-off date 21 October 2021. Median duration of treatment in the BAVENCIO® (avelumab) + BSC group was 24.9 weeks (range: 2.0–159.9); in the BSC alone group, it was 13.1 weeks (range: 0.1–155.6); †Data cut-off date: 4 June 2021. Median duration of treatment in the BAVENCIO® (avelumab) + BSC group was 25.3 weeks (range: 2.0–216.0). Median duration of treatment in the BSC alone arm was 13.1 weeks (range 0.1–231.7). BSC, best supportive care; CI, confidence interval; HR, hazard ratio; OS, overall survival. 1. Powles T et al. *N Engl J Med* 2020;383:1218–1230; 2. Powles T et al. *J Clin Oncol* 2022;40(Suppl 6):abstract 487

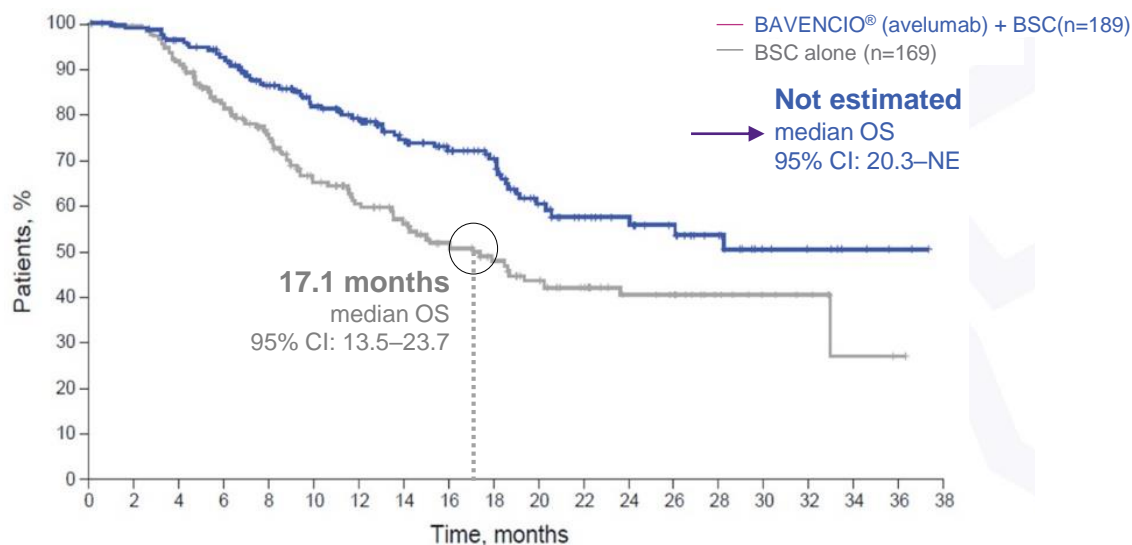


Unprecedented OS benefit in PD-L1+ population



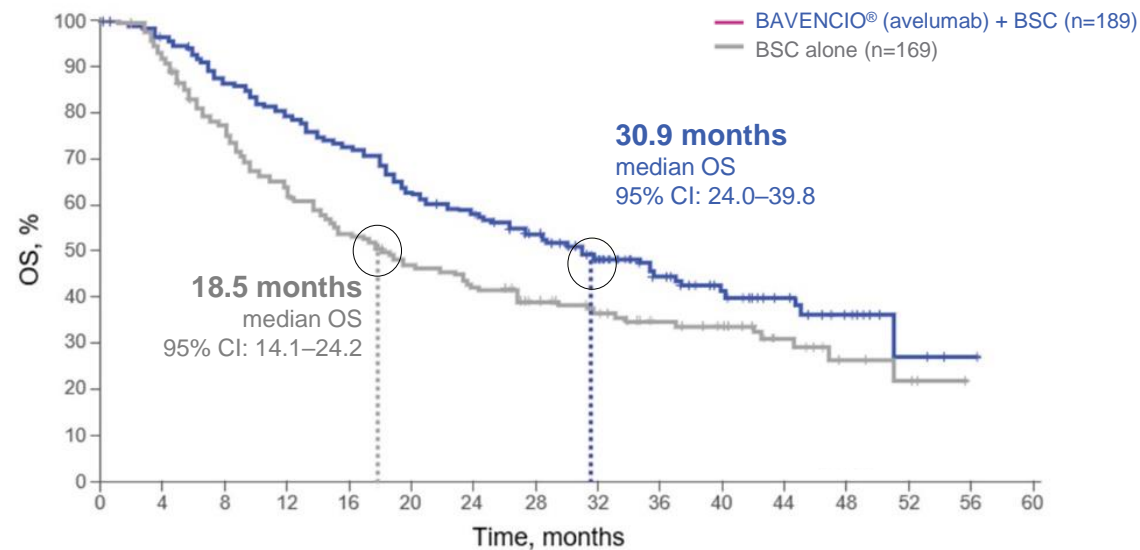
Primary Analysis

Primary endpoint. Data cut-off date: 21 October 2019*¹



Long Term Analysis

Primary endpoint. Data cut-off date: 4 June 2021^{†2}



No. at risk		0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
BAVENCIO® + BSC	189	185	177	165	146	129	114	95	81	70	49	38	32	26	18	9	8	4	2	0	
BSC alone	169	165	152	132	113	89	76	67	54	45	37	30	23	21	12	8	6	2	1	0	

No. at risk		0	4	8	12	16	20	24	28	32	36	40	44	48	52	56
BAVENCIO® + BSC	189	177	157	142	130	112	103	87	61	48	34	22	10	3	1	0
BSC alone	169	152	121	98	86	73	66	55	44	35	28	19	7	5	0	

Stratified HR for death: 0.56¹
(95% CI: 0.40-0.79)
p<0.001

Stratified HR for death: 0.69²
(95% CI: 0.521-0.901)
p=0.0064

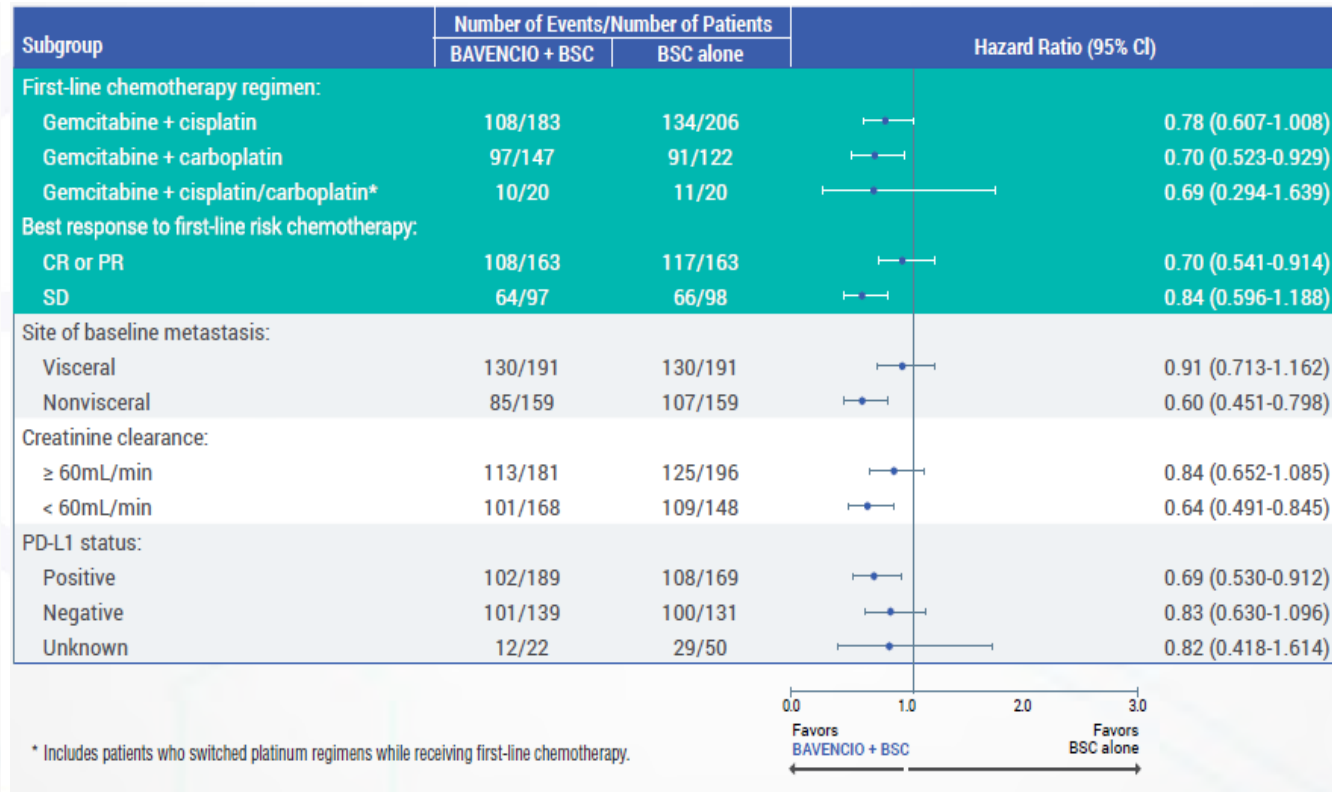
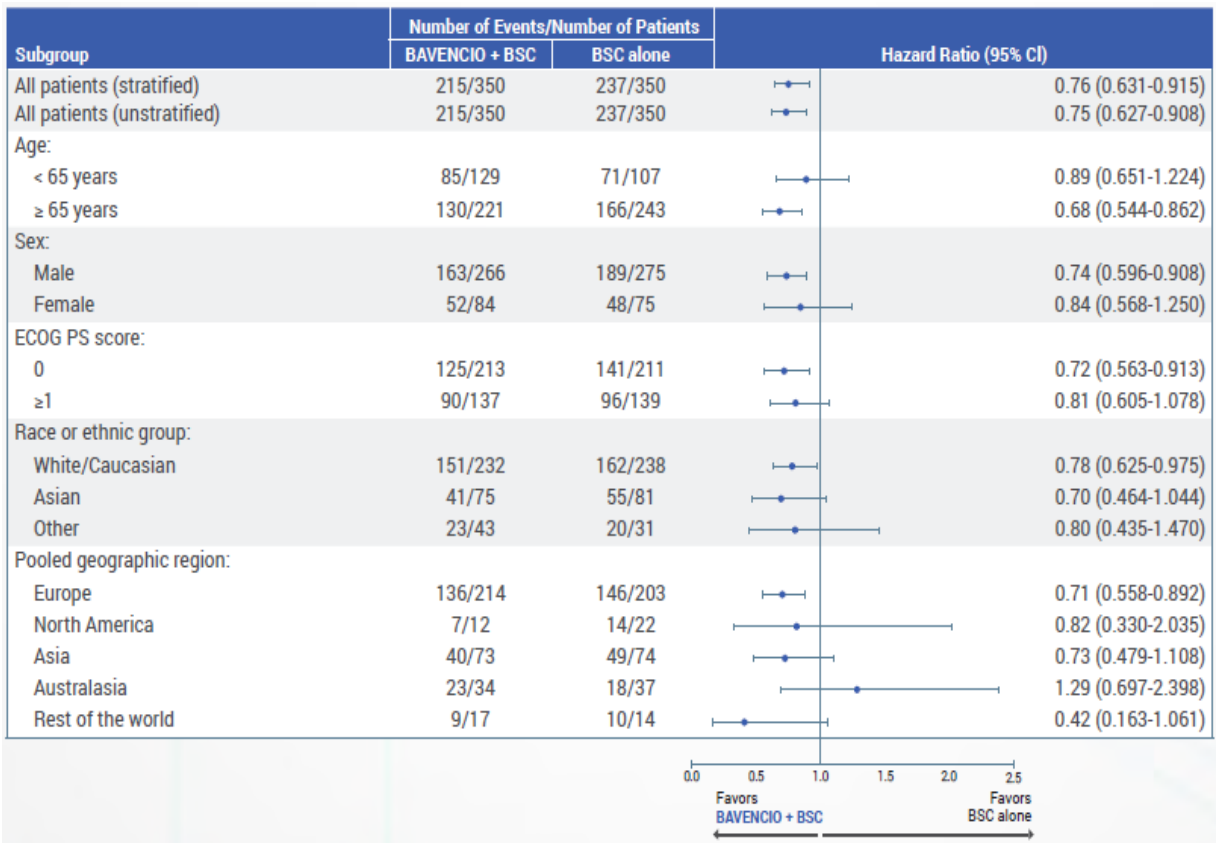
* Data cut-off date 21 October 2021. Median duration of treatment in the BAVENCIO® (avelumab) + BSC group was 24.9 weeks (range: 2.0-159.9); in the BSC alone group, it was 13.1 weeks (range: 0.1-155.6);³ †Data cut-off date: 4 June 2021. Median duration of treatment in the BAVENCIO® (avelumab) + BSC group was 25.3 weeks (range: 2.0-216.0).² Median duration of treatment in the BSC alone arm was 13.1 weeks (range 0.1- 31.7).⁴ BSC, best supportive care; CI, confidence interval; HR, hazard ratio; NE, not estimable; OS, overall survival; PD-L1, programmed cell death ligand 1. 1. Powles T et al. *N Engl J Med* 2020;383:1218-1230; 2. Powles T et al. *J Clin Oncol* 2022;40(Suppl 6):abstract 487



OS benefit across subgroups - Type of 1L CT regimen, response to CT, PDL1 status and overall population



Long Term Analysis
Primary endpoint. Data cut-off date: 4 June 2021†1



†Data cut-off date: 4 June 2021. Median duration of treatment in the BAVENCIO® (avelumab) + BSC group was 25.3 weeks (range: 2.0–216.0). Median duration of treatment in the BSC alone arm was 13.1 weeks (range 0.1–231.7);⁴ †This category includes patients who switched platinum-based regimens while receiving first-line chemotherapy.

1L, first line; BSC, best supportive care; CI, confidence interval; CR, complete response; ECOG, Eastern Cooperative Oncology Group; HR, hazard ratio; OS, overall survival; PD-L1, programmed cell death ligand 1; PR, partial response; SD, stable disease.
1. Powles T et al. *J Clin Oncol* 2022;40(Suppl 6):abstract 487

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In the overall population, patients treated with BAVENCIO® (avelumab) + BSC continued to achieve a longer median PFS compared with those treated with BSC alone*

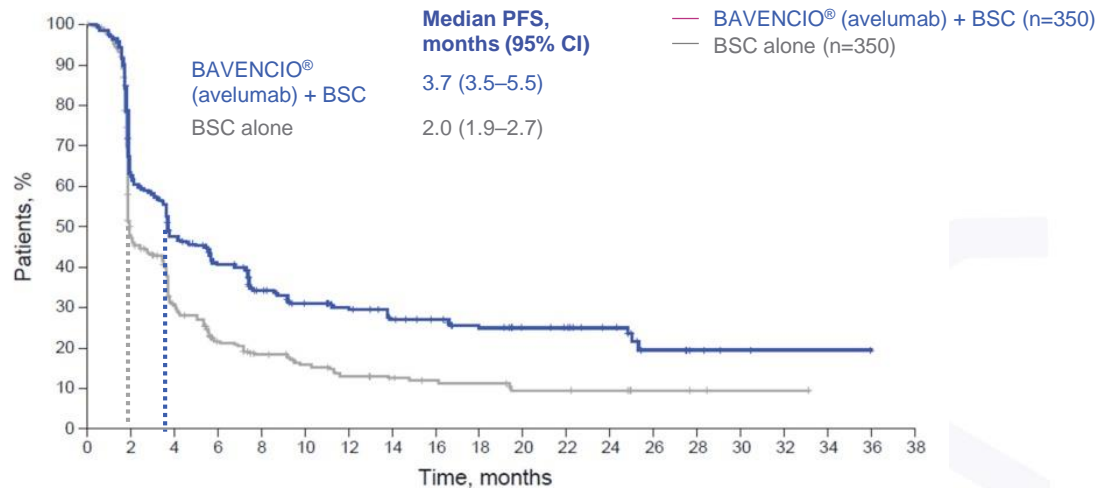


Primary Analysis

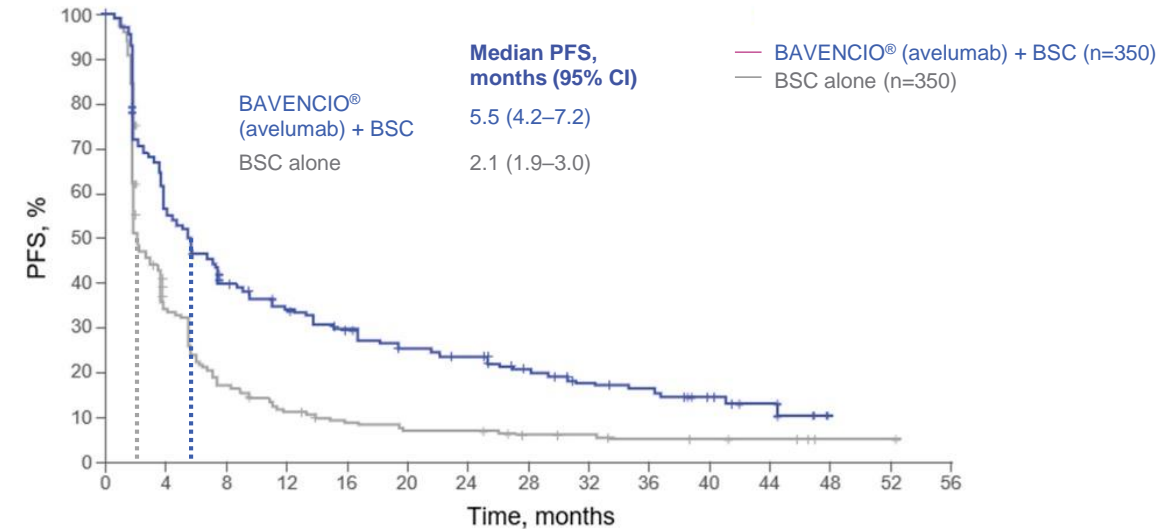
Data cut-off date: 21 October 2019*¹

Long Term Analysis

Data cut-off date: 4 June 2021†²



No. at risk	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
BAVENCIO® + BSC	350	198	145	118	90	72	59	49	45	34	27	25	17	9	4	2	1	1	0	
BSC alone	350	144	87	52	39	31	24	20	17	16	10	10	7	3	2	1	1	0		



No. at risk	0	4	8	12	16	20	24	28	32	36	40	44	48	52	56
BAVENCIO® + BSC	350	182	126	105	88	73	67	43	32	25	12	6	0		
BSC alone	350	101	51	33	24	19	19	14	13	9	6	4	1	1	0

1.7-month improvement in median PFS in patients receiving BAVENCIO® (avelumab) + BSC vs BSC alone*¹

Stratified HR for disease progression of death: 0.62¹
(95% CI: 0.52–0.75)*

3.4-month improvement in median PFS in patients receiving BAVENCIO® (avelumab) + BSC vs BSC alone*²

Stratified HR for disease progression of death: 0.54²
(95% CI: 0.457–0.645),
2-sided p-value=<0.0001*

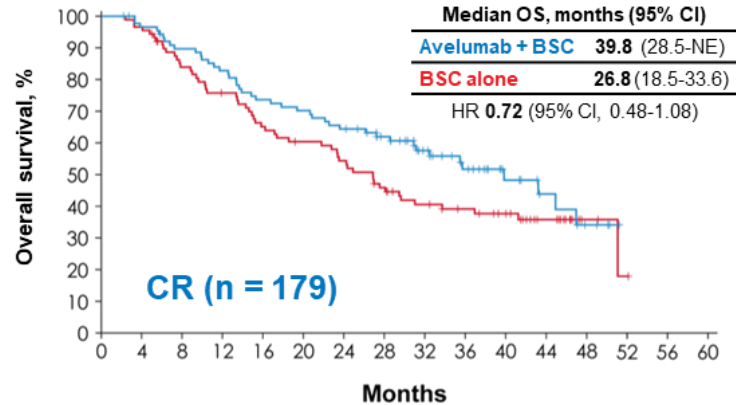
*PFS was a secondary endpoint of the study; as such, median PFS data may not be defined as statistically significant; *Data cut-off date: 21 October 2019. Median duration of treatment in the BAVENCIO® (avelumab) + BSC group was 24.9 weeks (range: 2.0–159.9); in the BSC alone group, it was 13.1 weeks (range: 0.1–155.6); †Data cut-off date: 4 June 2021. Median duration of treatment in the BAVENCIO® (avelumab) + BSC group was 25.3 weeks (range: 2.0–216.0). Median duration of treatment in the BSC alone arm was 13.1 weeks (range 0.1–231.7). BSC, best supportive care; CI, confidence interval; HR, hazard ratio; PFS, progression-free survival.

1. Powles T et al. *N Engl J Med* 2020;383:1218–1230; 2. Powles T et al. *J Clin Oncol* 2022;40(Suppl 6):abstract 487

JAVELIN Bladder 100: mOS improvement irrespective of prior response to chemo

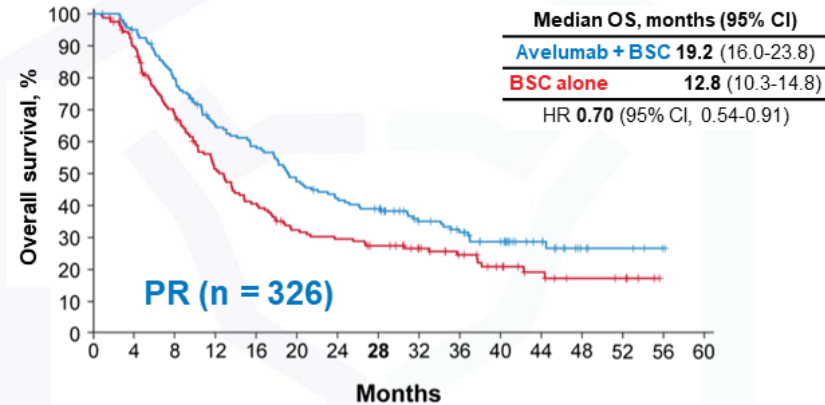
Long Term Analysis
Data cut-off date: 4 June 2021^{†1}

Complete response



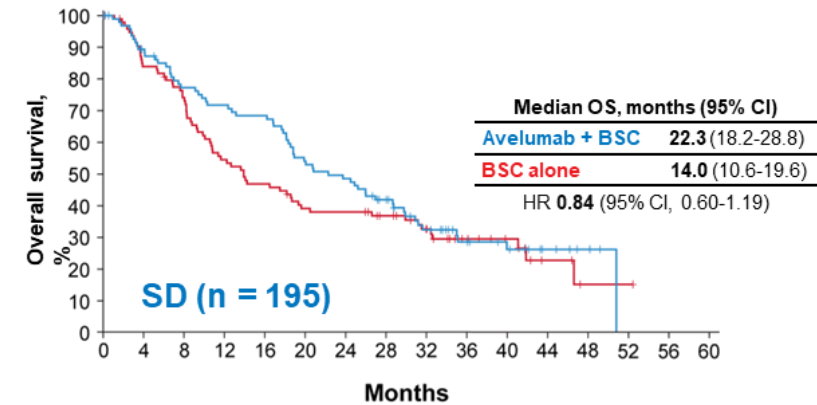
No. at risk	0	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
Avelumab + BSC	90	85	78	72	64	61	56	47	34	24	14	9	4	0		
BSC	89	86	72	64	55	50	45	37	30	26	21	13	3	1	0	

Partial response



No. at risk	0	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
Avelumab + BSC	163	151	126	100	90	73	64	58	42	35	27	16	6	4	1	0
BSC	163	140	103	76	60	46	42	37	29	22	15	10	6	5	0	

Stable disease



No. at risk	0	4	8	12	16	20	24	28	32	36	40	44	48	52	56	60
Avelumab + BSC	97	82	70	65	62	49	44	35	23	15	12	6	3	0		
BSC	98	78	68	50	43	35	34	29	23	14	10	4	1	1	0	

[†]Data cut-off date: 4 June 2021. Median duration of treatment in the BAVENCIO® (avelumab) + BSC group was 25.3 weeks (range: 2.0–216.0). Median duration of treatment in the BSC alone arm was 13.1 weeks (range 0.1–231.7). BSC, best supportive care; CI, confidence interval; HR, hazard ratio; PFS, progression-free survival.

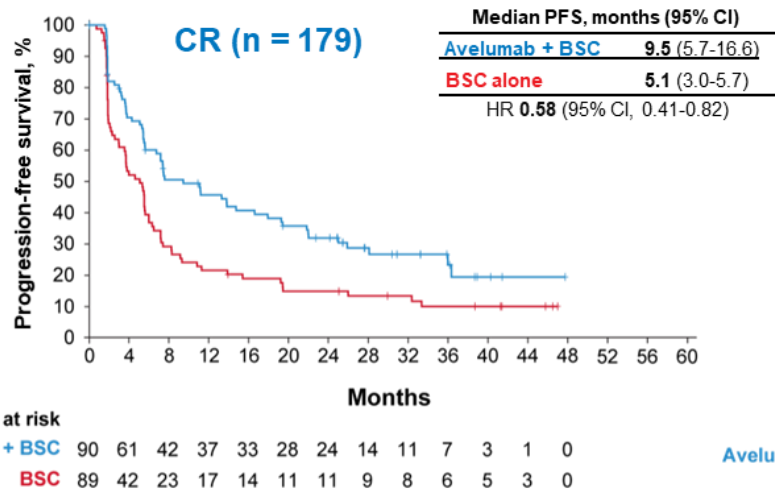
1. Powles T et al. *J Clin Oncol* 2022;40(Suppl 6):abstract 487

JAVELIN Bladder 100: PFS improvement irrespective of prior response to chemo

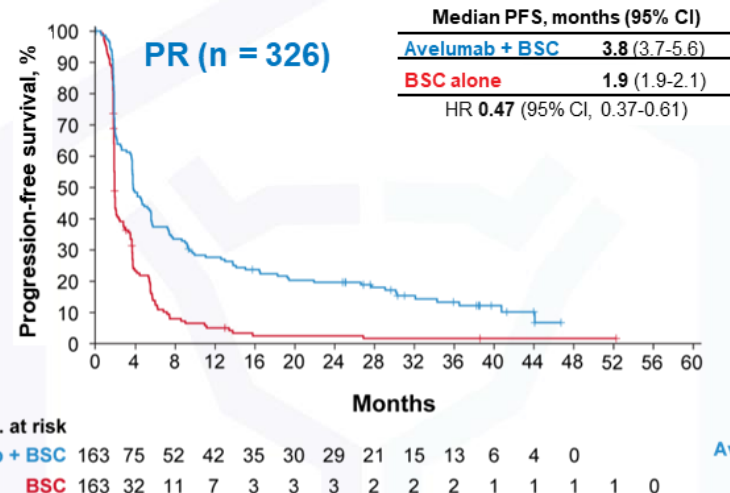


Long Term Analysis
Data cut-off date: 4 June 2021^{†1}

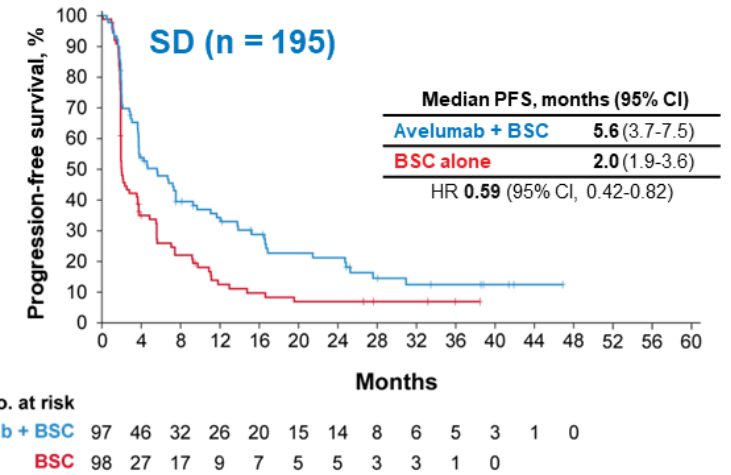
Complete response



Partial response



Stable disease

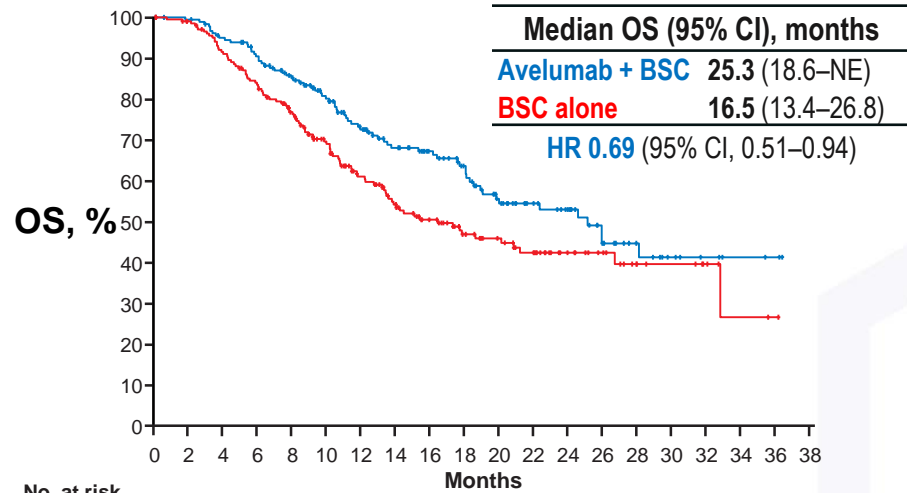


[†]Data cut-off date: 4 June 2021. Median duration of treatment in the BAVENCIO® (avelumab) + BSC group was 25.3 weeks (range: 2.0–216.0). Median duration of treatment in the BSC alone arm was 13.1 weeks (range 0.1–231.7). BSC, best supportive care; CI, confidence interval; HR, hazard ratio; PFS, progression-free survival.

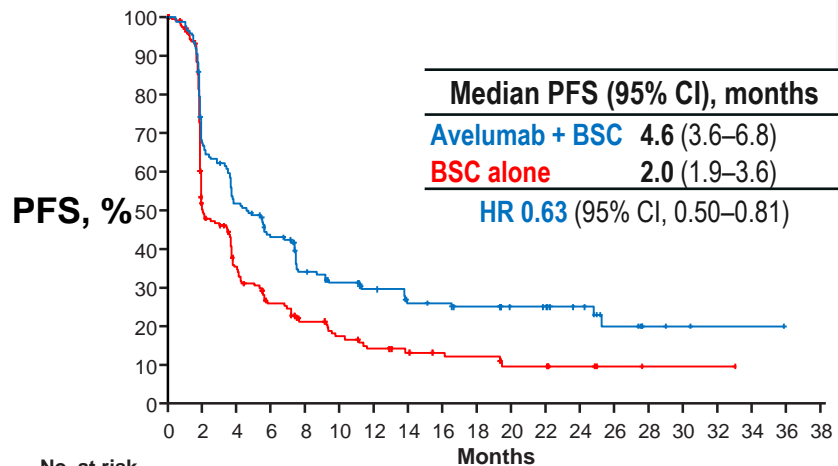
1. Powles T et al. *J Clin Oncol* 2022;40(Suppl 6):abstract 487

JAVELIN Bladder 100: OS and PFS benefit by 1L chemo

Gemcitabine + cisplatin (n=389)

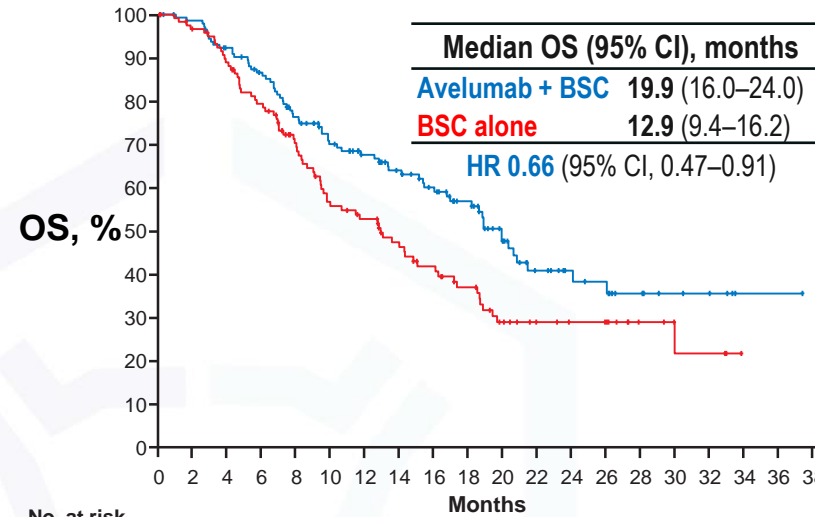


No. at risk	183	180	169	157	141	122	103	89	77	66	49	38	32	22	14	8	5	3	2	0
Avelumab + BSC	183	180	169	157	141	122	103	89	77	66	49	38	32	22	14	8	5	3	2	0
BSC	206	199	182	165	142	116	92	76	63	48	42	34	23	17	11	8	6	2	1	0

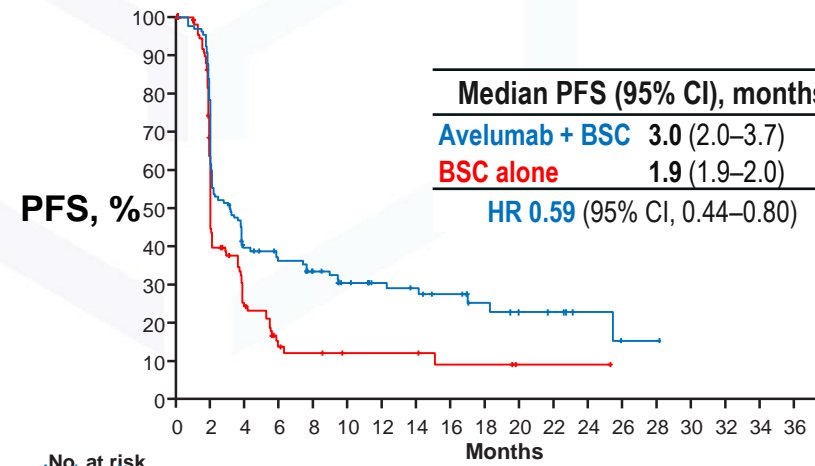


No. at risk	183	112	85	67	49	40	34	27	26	23	18	17	13	7	3	2	1	1	0
Avelumab + BSC	183	112	85	67	49	40	34	27	26	23	18	17	13	7	3	2	1	1	0
BSC	206	88	58	39	28	22	17	14	12	11	7	7	4	2	1	1	1	0	0

Gemcitabine + carboplatin (n=269)



No. at risk	147	142	130	119	102	88	78	68	59	48	32	21	16	14	9	6	5	1	1	0
Avelumab + BSC	147	142	130	119	102	88	78	68	59	48	32	21	16	14	9	6	5	1	1	0
BSC	122	114	104	91	72	57	52	42	36	29	20	15	13	12	6	3	3	0	0	0



No. at risk	147	72	48	41	33	25	20	18	16	9	7	6	3	1	0
Avelumab + BSC	147	72	48	41	33	25	20	18	16	9	7	6	3	1	0
BSC	122	42	22	8	7	5	5	4	3	3	1	1	1	0	0

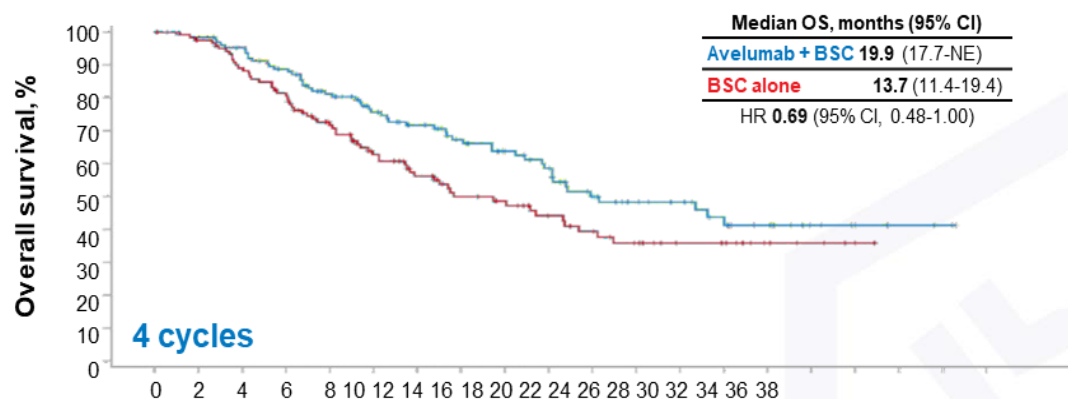
OS and PFS benefit with avelumab 1L maintenance occurred irrespective of 1st-line CT regimen

BSC, best supportive care; CI, confidence interval; CT, chemotherapy; HR, hazard ratio; NE, not estimable; OS, overall survival. Grivas P, et al. Virtual ESMO 2020

Overall Survival is not affected by number of CT cycles

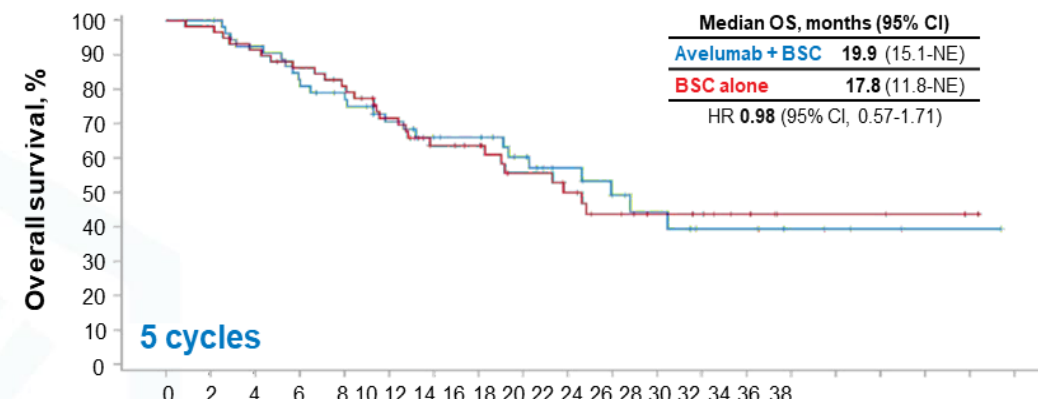
Primary Analysis

Data cut-off date: 21 October 2019*1



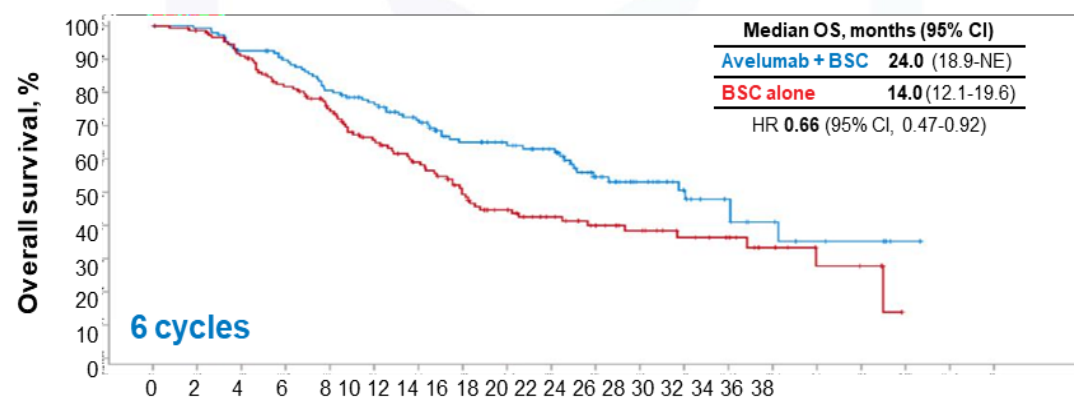
No. at risk

Months	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
Avelumab + BSC	127	124	118	108	93	79	69	59	51	44	32	26	23	18	13	7	5	3	2	0
BSC	124	116	105	95	75	60	49	39	35	28	24	19	14	12	6	4	2	0	0	0



No. at risk

Months	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
Avelumab + BSC	54	54	48	43	39	32	27	26	20	15	11	9	6	6	4	3	2	1	1	0
BSC	59	58	53	49	45	37	28	26	20	17	13	10	9	6	3	3	3	2	1	0



No. at risk

Months	0	2	4	6	8	10	12	14	16	18	20	22	24	26	28	30	32	34	36	38
Avelumab + BSC	150	147	135	128	115	105	91	73	66	57	39	27	19	14	8	5	4	1	0	0
BSC	148	143	131	113	98	81	69	54	44	35	29	24	18	15	9	5	4	0	0	0

*Data cut-off date: 21 October 2019. Median duration of treatment in the BAVENCIO® (avelumab) + BSC group was 24.9 weeks (range: 2.0–159.9); in the BSC alone group, it was 13.1 weeks (range: 0.1–155.6); BSC, best supportive care; CI, confidence interval; HR, hazard ratio; PFS, progression-free survival. 1. Powles T et al. *N Engl J Med* 2020;383:1218–1230

Loriot Y, et al. ASCO GU 2021 Abstract #438

Avelumab first-line maintenance + best supportive care (BSC) vs BSC alone in Asian patients with advanced urothelial carcinoma: JAVELIN Bladder 100 subgroup analysis

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A. di Pietro,⁸ J. Wang,⁹ R. Laliberte,⁹ S. Gao,¹⁰ H. Gurney¹¹

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Abstract No. 486. Presented at the 2022 ASCO Genitourinary Cancers Symposium, February 17-19, 2022; San Francisco, CA; Hybrid.

This message is intended for registered healthcare practitioners

MERCK



The Asian subgroup represents 21% of the overall population of the JAVELIN Bladder 100 trial

INDUCTION CHEMOTHERAPY

Unresectable locally advanced or metastatic UC

CR, PR, or SD with standard 1L CT (4–6 cycles):

- Cisplatin + gemcitabine, OR
- Carboplatin + gemcitabine

MAINTENANCE

Asian subgroup:
(n=147)



1:1

BAVENCIO® (10 mg/kg IV Q2W) + BSC*

(n=73)

BSC alone*

(n=74)

Treatment-free interval (4–10 weeks) followed by radiological assessment of response

Until PD, unacceptable toxicity, or withdrawal

Stratification

- Best response to 1L induction CT (CR/PR vs SD)
- Metastatic site at the start of CT (visceral vs non-visceral)

Primary endpoint†

- OS

Primary analysis populations

- All randomized patients
- PD-L1+ patients‡

Secondary endpoints†:

- PFS§
- OR§
- Safety and tolerability

Data cutoff date: Oct 21, 2019.

*BSC (e.g., antibiotics, nutritional support, hydration, or pain management) was administered as per local practice, based on patient needs and clinical judgment; other antitumor therapy was not permitted, but palliative local radiotherapy for isolated lesions was acceptable. † All endpoints were measured post-randomization (after CT). ‡ Assessed using the Ventana SP263 assay. § Determined by BICR and as per RECIST 1.1.

BSC, best standard of care; BICR, blinded independent central review; CR, complete response; CT, chemotherapy; OR, objective response; OS, overall survival; PD, progression of disease; PD-L1, programmed-death ligand 1; PFS, progression-free survival; PR, partial response; SD, stable disease; UC, urothelial carcinoma.

Eto M, et al. Presented at the ASCO Genitourinary Cancers Symposium 2022, February 17–19, 2022 (Abstract 486).

Patient baseline characteristics were similar between treatment arms and consistent with the overall population^{1,2}



		Asian population (n=147)		PD-L1+ population (n=71)	
		BAVENCIO® + BSC (n=73)	BSC alone (n=74)	BAVENCIO® + BSC (n=40)	BSC alone (n=31)
Median age, years		69.0	70.0	70.0	70.0
ECOG PS, n (%)	0	51 (69.9)	49 (66.2)	27 (67.5)	23 (74.2)
	≥1	22 (30.1)	25 (33.8)	13 (32.5)	8 (25.8)
Creatinine clearance at baseline, n (%)	≥60 mL/min	31 (42.5)	29 (39.2)	16 (40.0)	15 (48.4)
	<60 mL/min	42 (57.5)	43 (58.1)	24 (60.0)	14 (45.2)
	Unknown	0	2 (2.7)	0	2 (6.5)
Site of metastasis at start of CT, n (%)	Visceral	34 (46.6)	37 (50.0)	12 (30.0)	16 (51.6)
	Non-visceral	39 (53.4)	37 (50.0)	28 (70.0)	15 (48.4)
PD-L1 status, n (%)	Positive	40 (54.8)	31 (41.9)	40 (100.0)	31 (100.0)
	Negative	27 (37.0)	27 (36.5)	0	0
	Unknown	6 (8.2)	16 (21.6)	0	0
1L CT regimen, n (%)	GEM + CIS	51 (69.9)	53 (71.6)	29 (72.5)	25 (80.6)
	GEM + CAR	19 (26.0)	20 (27.0)	9 (22.5)	6 (19.4)
	GEM + CAR + CIS*	3 (4.1)	1 (1.4)	2 (5.0)	0
Best response to 1L CT, n (%)	CR or PR	50 (68.5)	51 (68.9)	27 (67.5)	23 (74.2)
	SD	23 (31.5)	23 (31.1)	13 (32.5)	8 (25.8)

1L, first line; BSC, best supportive care; CR, complete response; ECOG PS, Eastern Cooperative Oncology Group performance status; PR, partial response; SD, stable disease.

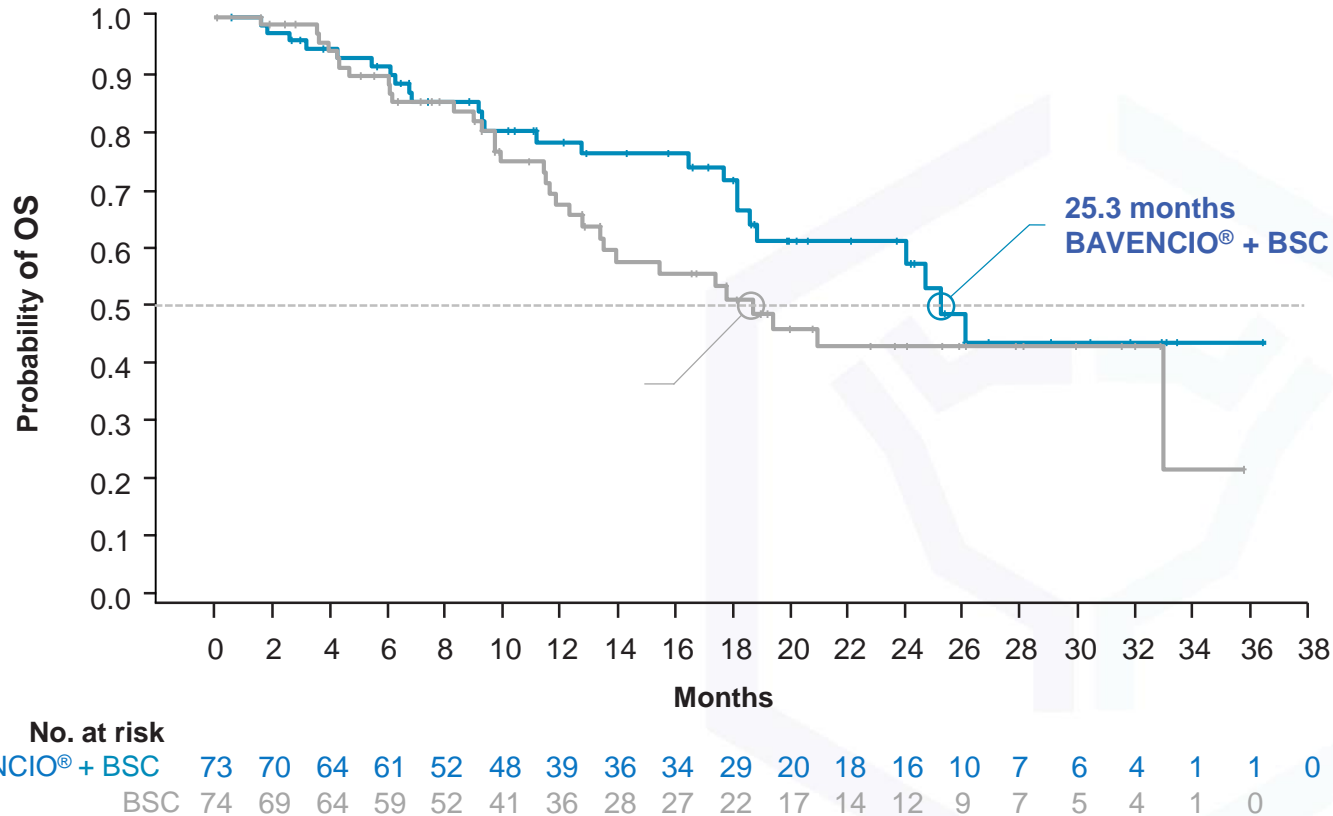
*Patients who switched platinum regimens while receiving 1L chemotherapy.

Eto M, et al. Presented at the ASCO Genitourinary Cancers Symposium 2022, February 17–19, 2022 (Abstract 486).

This message is intended for registered healthcare practitioners



BAVENCIO® 1L maintenance treatment demonstrated prolonged survival compared with BSC alone



ASIAN POPULATION	
Median OS, months (95% CI)	
BAVENCIO® + BSC (n=73)	25.3 (18.6–NE)
BSC alone (n=74)	18.7 (12.8–NE)
Stratified HR (95% CI)	0.74 (0.434–1.260)

PD-L1+ POPULATION	
Median OS, months (95% CI)	
BAVENCIO® + BSC (n=40)	26.1 (18.2–NE)
BSC alone (n=31)	19.4 (11.9–NE)
Stratified HR (95% CI)	0.66 (0.279–1.541)

1L, first-line; BSC, best supportive care; HR, hazard ratio; NE, not estimable; OS, overall survival; PD-L1, programmed-death ligand 1. Eto, M et al. Presented at the ASCO Genitourinary Cancers Symposium 2022, February 17–19, 2022 (Abstract 486).

Summary: Asian Subgroup Data

BAVENCIO[®] 1L maintenance treatment is a new standard of care in Asian patients with advanced UC whose disease has not progressed with 1L platinum-based CT



- **Primary endpoint:** The mOS was 25.3 months (95% CI 18.6–NE) from the start of maintenance therapy versus 18.7 months (95% CI 12.8–NE) with BSC alone among all Asian patients



- 26% reduction in the risk of death vs BSC alone among all Asian patients HR: 0.74 (95% CI 0.434–1.260)



- BAVENCIO[®] 1L maintenance treatment led to a numerically longer time to **end of next-line therapy*** in the Asian subgroup compared with BSC alone



- **Safety and tolerability:** The safety profile of BAVENCIO[®] 1L maintenance treatment in Asian patients was consistent with the overall population

1L, first-line; BSC, best supportive care; HR, hazard ratio; NE, not estimable; OS, overall survival; PD-L1, programmed-death ligand 1.
Eto, M et al. Presented at the ASCO Genitourinary Cancers Symposium 2022, February 17–19, 2022 (Abstract 486).

JAVELIN Bladder 100: A well-characterized safety and tolerability profile



TEAE	BAVENCIO® (avelumab) + BSC (n=344)		BSC alone (n=345)	
	Any grade	Grade ≥3	Any grade	Grade ≥3
Any TEAE, %	98.0	47.4	77.7	25.2
Fatigue	17.7	1.7	7.0	0.6
Pruritus	17.2	0.3	1.7	0
UTI	17.2	4.4	10.4	2.6
Diarrhoea	16.6	0.6	4.9	0.3
Arthralgia	16.3	0.6	5.5	0
Asthenia	16.3	0	5.5	1.2
Constipation	16.3	0.6	9.0	0
Back pain	16.0	1.2	9.9	2.3
Nausea	15.7	0.3	6.4	0.6
Pyrexia	14.8	0.3	3.5	0
Decreased appetite	13.7	0.3	6.7	0.6
Cough	12.8	0.3	4.6	0
Vomiting	12.5	1.2	3.5	0.6
Hypothyroidism	11.6	0.3	0.6	0
Rash	11.6	0.3	1.2	0
Anaemia	11.3	3.8	6.7	2.9
Haematuria	10.5	1.7	10.7	1.4
IRR	10.2	0.9	0	0

- TEAEs led to discontinuation of avelumab in 11.9% of patients
- Death was attributed by the investigator to study treatment toxicity in 2 patients (0.6%) in the BAVENCIO® (avelumab) + BSC arm
- One death occurred due to sepsis (after 11 infusions of BAVENCIO® [avelumab]) and the other due to ischaemic stroke (100 days after a single dose of BAVENCIO® [avelumab])

Data cut-off date: 21 October 2019

The table shows TEAEs of any grade occurring in ≥10% or Grade ≥3 TEAEs occurring in ≥5% in either arm. Safety was assessed in all patients who received ≥1 dose of BAVENCIO® (avelumab) in the BAVENCIO® (avelumab) arm, or who completed the Cycle 1 Day 1 visit in the BSC arm (N=689). Data cut-off date: 21 October 2019. Median duration of treatment in the BAVENCIO® (avelumab) + BSC group was 24.9 weeks (range: 2.0–159.9); in the BSC alone group, it was 13.1 weeks (range: 0.1–155.6). Median follow-up for each group was more than 19 months.

BSC, best supportive care; IRR, infusion-related reaction; TEAE, treatment-emergent adverse event; UTI, urinary tract infection.

1. Powles T et al. *N Engl J Med* 2020;383:1218–1230.

This message is intended for registered healthcare practitioners



A well-characterized safety and tolerability profile

Immune-related AEs, % ²	BAVENCIO [®] (avelumab) + BSC (n=344)	
	Any grade	Grade 3
Any immune-related AE	29.4	7.0
Hypothyroidism	10.2	0.3
Rash	4.9	0.3
Hyperthyroidism	4.7	0
Rash maculopapular	2.3	0.3
Pruritis	2.0	0
Pneumonitis	1.5	0.3
Colitis	0.9	0.6
Increased ALT	0.9	0.9
Increased AST	0.6	0.6
Hyperglycaemia	0.9	0.9
Myositis	0.6	0.6

- No grade 4/5 irAEs occurred
- High-dose corticosteroids (≥40 mg total daily prednisone or equivalent) were administered following immune-related AEs in 9.0% of BAVENCIO[®] (avelumab)-treated patients¹

Data cut-off date: 21 October 2019

The table shows immune-related AEs of any grade occurring in ≥1% or Grade ≥3 immune-related AEs occurring in ≥0.5% in the BAVENCIO[®] (avelumab) + BSC arm. Immune-related AEs were identified according to a prespecified case definition. Data cut-off date: 21 October 2019. Median duration of treatment in the BAVENCIO[®] (avelumab) + BSC group was 24.9 weeks (range: 2.0–159.9); in the BSC alone group, it was 13.1 weeks (range: 0.1–155.6).¹ Median follow-up for each group was more than 19 months.¹

AE, adverse event; ALT, alanine aminotransferase; AST, aspartate aminotransferase; BSC, best supportive care.

1. Powles T et al. *N Engl J Med* 2020;383:1218–1230; 2. Powles T et al. *N Engl J Med* 2020;383:1218–1230 (supplementary appendix).

This message is intended for registered healthcare practitioners

Adverse events after ≥12 months of treatment in the BAVENCIO® (avelumab) + BSC arm



Summary of AEs overall and with onset after ≥12 months of treatment with BAVENCIO® (avelumab) + BSC¹

Events, n (%)	BAVENCIO® (avelumab) + BSC	
	Onset after ≥12 months of treatment (n=118)*	Onset at any time (n=344)†
TEAE of any grade	102 (86.4)	338 (98.3)
Grade ≥3 TEAE	56 (47.5)	185 (53.8)
TRAE of any grade	59 (50.0)	269 (78.2)
Grade ≥3 TRAE	14 (11.9)	67 (19.5)
Serious TEAE	28 (23.7)	105 (30.5)
Serious TRAE	6 (5.1)	35 (10.2)
TEAE leading to interruption of BAVENCIO® (avelumab)	43 (36.4)	156 (45.3)
TEAE leading to discontinuation	13 (11.0)	49 (14.2)
TRAE leading to discontinuation	12 (10.2)	40 (11.6)
TEAE leading to death	3 (2.5)	7 (2.0)
TRAE leading to death	1 (0.8)	2 (0.6)
Infusion-related reaction of any grade	4 (3.4)	75 (21.8)

Most common TEAEs with onset after ≥12 months of treatment with BAVENCIO® (avelumab) + BSC[‡]

Events, n (%)	BAVENCIO® (avelumab) + BSC (n=118)	
	Any grade	Grade ≥3
Any TEAE	102 (86.4)	56 (47.5)
Urinary tract infection	15 (12.7)	3 (2.5)
Diarrhoea	15 (12.7)	1 (0.8)
Arthralgia	14 (11.9)	1 (0.8)
Back pain	14 (11.9)	0
Cough	14 (11.9)	0
Pruritus	14 (11.9)	0
Nasopharyngitis	12 (10.2)	0

1 patient (0.8%) had a TRAE after ≥12 months of treatment with BAVENCIO® (avelumab) + BSC that led to death (attributed to immune-mediated nephritis by the treating investigator)¹

Data cut-off date: 4 June 2021[§]

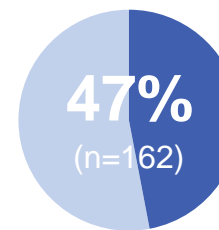
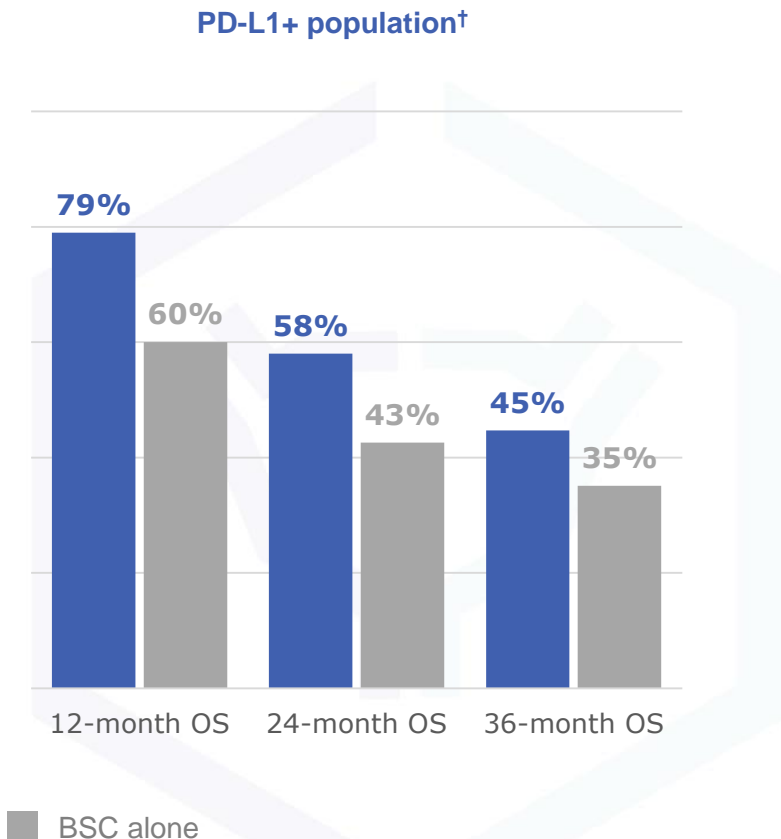
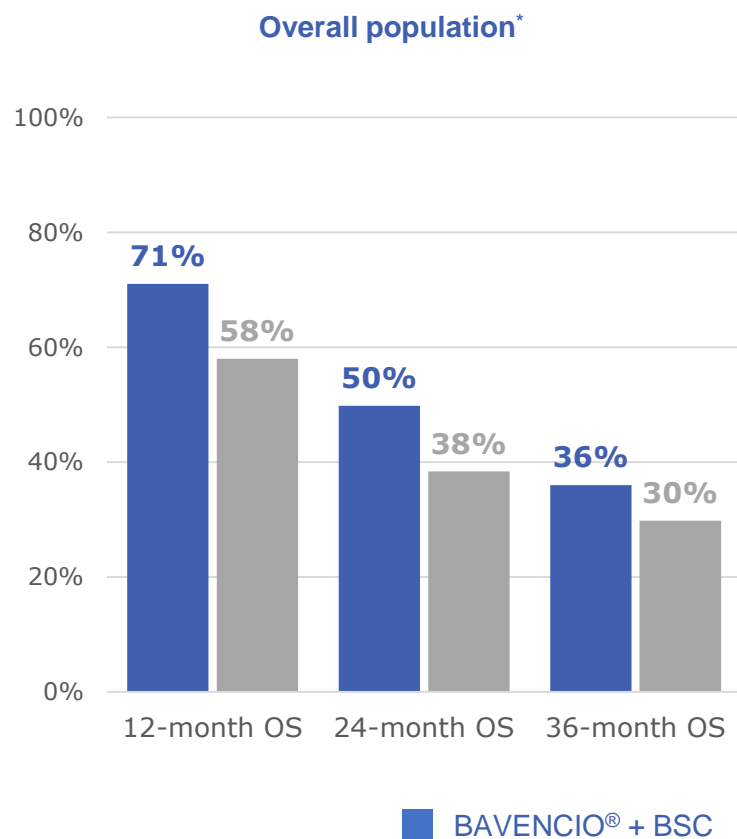
*Patients with ≥12 months of treatment; †All treated patients; ‡Table shows TEAEs of any grade occurring in ≥10% of patients with ≥12 months of treatment; §Median duration of treatment in the BAVENCIO® (avelumab) + BSC arm was 25.3 weeks (range: 2.0–216.0). Median duration of treatment in the BSC alone arm was 13.1 weeks (range 0.1–231.7).

AE, adverse event; BSC, best supportive care; TEAE, treatment-emergent adverse event; TRAE, treatment-related adverse event.

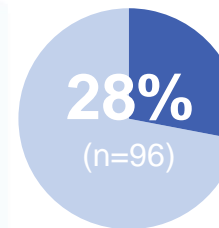
1. Powles T et al. *J Clin Oncol* 2022;40(Suppl 6):abstract 487

Continuation of Avelumab maintenance

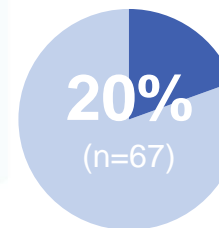
Long Term Analysis
Data cut-off date: 4 June 2021^{†1}



Patients were exposed to BAVENCIO® for **>6 months**



Patients were exposed to BAVENCIO® for **>12 months**



Patients were exposed to BAVENCIO® for **≥24 months²**

(Median duration of treatment was 25.3 weeks)²

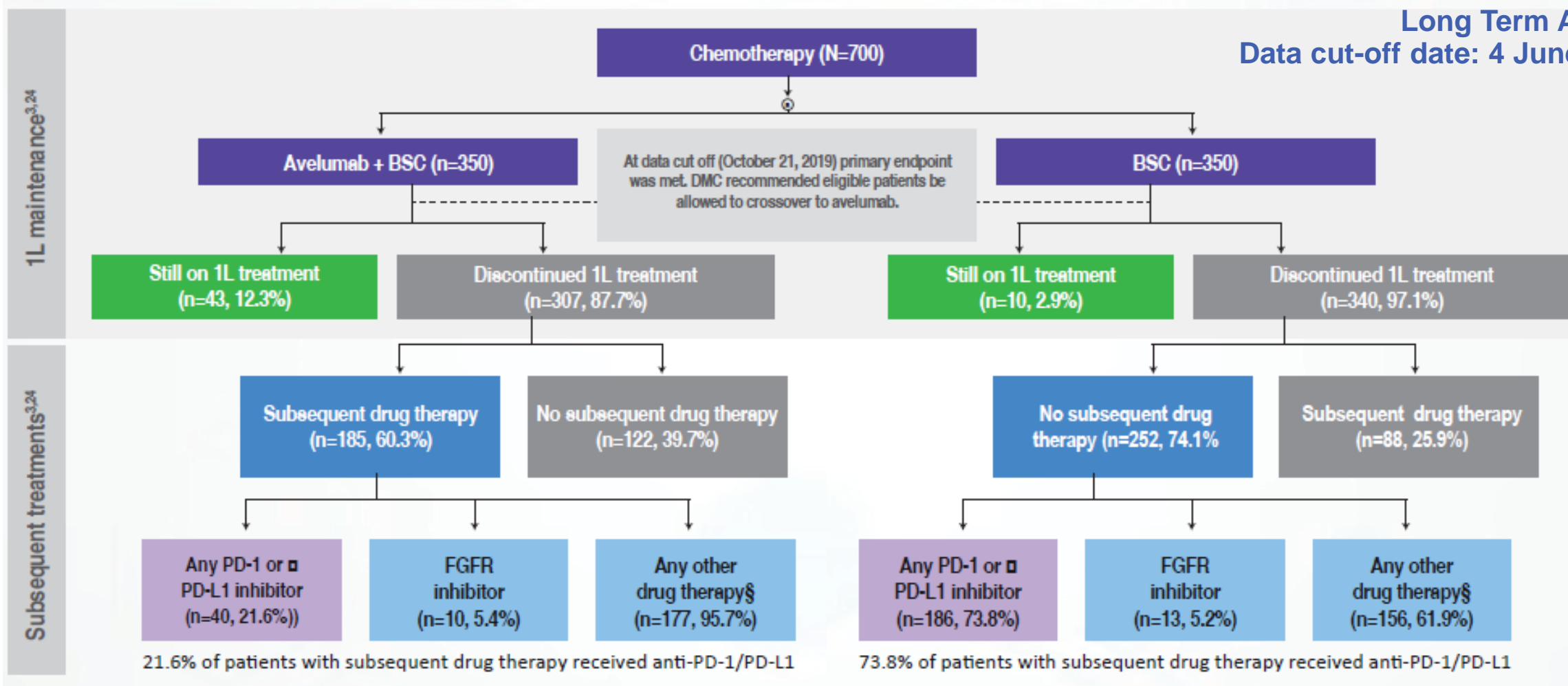
* OS was measured post-randomization (after chemotherapy); the OS analysis crossed the prespecified efficacy boundary based on the alpha-spending function (P<0.0053)

[†] OS was measured post randomization (after chemotherapy); the OS analysis crossed the prespecified efficacy boundary based on the alpha-spending function (P<0.0014).

1. Powles T, et al. Presented at ASCO Genitourinary Cancers Symposium 2022, Feb 17–19, 2022 (Abstract 487).

Subsequent therapy: 53.1% patients in BSC arm received PD-L1/PD-1 inhibitor in subsequent line

Long Term Analysis
Data cut-off date: 4 June 2021^{†1}



[§]Other drug therapies included single agent or combination chemotherapies, TKI, anti-body drug conjugates, IDO1 inhibitors, PARP inhibitors, mTOR inhibitors, monoclonal antibodies, immune-stimulating vaccines or investigational agents.

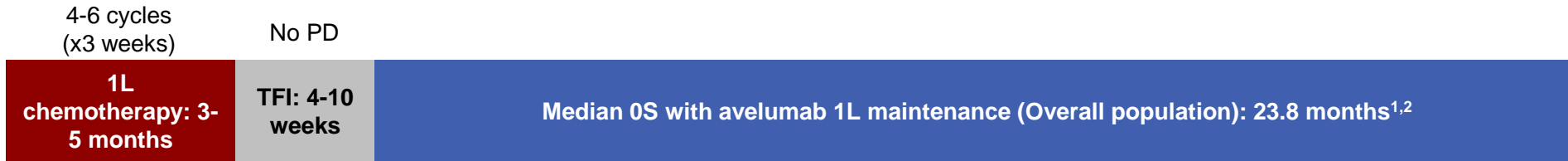
[†]Data cut-off date: 4 June 2021. Median duration of treatment in the BAVENCIO[®] (avelumab) + BSC group was 25.3 weeks (range: 2.0–216.0). Median duration of treatment in the BSC alone arm was 13.1 weeks (range 0.1–231.7). DMC, Data Monitoring Committee; FGFR, fibroblast growth factor receptor; BSC, best supportive care; CI, confidence interval; HR, hazard ratio; PFS, progression-free survival.

1. Powles T et al. *J Clin Oncol* 2022;40(Suppl 6):abstract 487

Survival goes further with the right IO at the right time



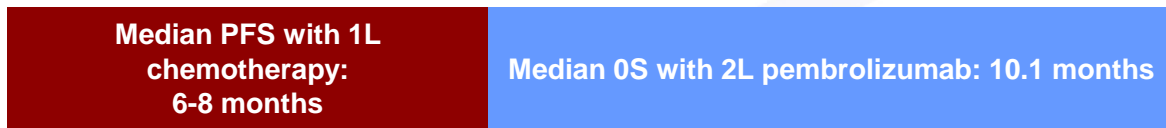
JAVELIN Bladder 100: 1L platinum-containing chemotherapy --> avelumab 1L maintenance in patients without PD



Estimated median OS from start of 1L therapy

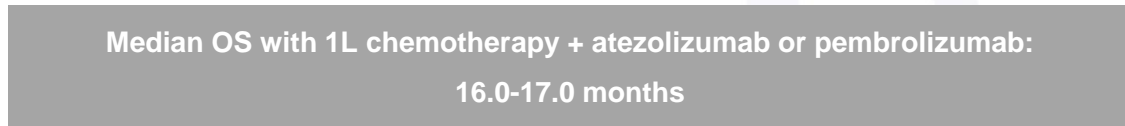
30 months

ICI as 2L therapy after 1L platinum-containing chemotherapy



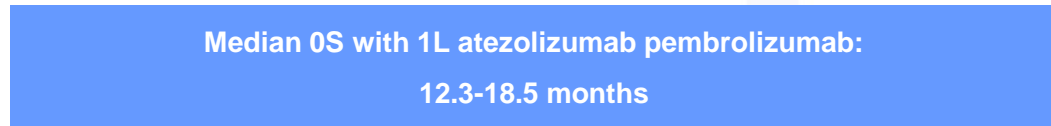
16-18 months

ICI in combination with 1L platinum-containing chemotherapy



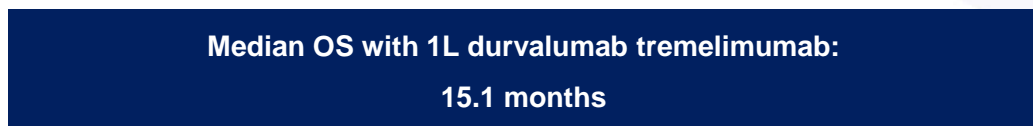
16.0-17.0 months

ICI as 1L monotherapy (for cisplatin-ineligible patients with a PD-L1+ tumor only)



12.3-18.5 months

ICI + ICI as 1L therapy (anti-PD-L1 + anti-CTLA-4)



15.1 months

1. Grivas P, et al. Avelumab first-line maintenance in locally advanced or metastatic urothelial carcinoma: applying clinical trial findings to clinical practice. *Cancer Treat Rev.* 2021. [Epub ahead of print]. doi: 10.1016/j.ctrv.2021.102187. 2. Powles T et al. *J Clin Oncol* 2022;40(Suppl 6):abstract 487

This message is intended for registered healthcare practitioners



JAVELIN Bladder 100 Summary



- Long-term follow-up from JAVELIN Bladder 100 trial (≥ 2 years in all patients) **continues to show prolongation of OS and PFS with avelumab + BSC vs BSC alone**, both among all randomized patients and those with PD-L1–positive tumors¹
- **OS rates at 2 years were 49.8% in the avelumab + BSC arm vs 38.4% in the BSC alone arm¹**
- **2-year PFS rates were 23.4% vs 7.1%, respectively**
- The **long-term safety** profile of avelumab was **consistent with previous monotherapy studies³** and no new safety signals were identified
- **OS was prolonged with avelumab 1L maintenance** despite a high proportion of patients treated with BSC alone receiving a subsequent anticancer drug therapy (avelumab + BSC, 52.9%; BSC, 72.0%)
- These **results further support the recommendation of avelumab 1L maintenance as standard of care** for patients with advanced UC that has not progressed with 1L platinum-containing chemotherapy.¹ Long-term safety data and the high percentage of patients on treatment at 2 years indicate the good tolerability and feasibility of the regimen as treatment until progression

1L, first-line; BSC, best supportive care; CR, complete response; mOS, median overall survival; OS, overall survival; PD-1, programmed cell death protein 1; PD-L1, programmed death-ligand 1; PFS, progression-free survival; PR, partial response; SD, stable disease; UC, urothelial carcinoma.

1. Powles T, et al. Poster E7. Presented at: ASCO GU Symposium; February 17-19, 2022; San Francisco, CA

Guideline Updates have followed the latest insights



Avelumab 1L maintenance is recommended with the **highest level of evidence** in major global guidelines

	NCCN ¹	ESMO ²		EAU ³
Cisplatin-ELIGIBLE	<ul style="list-style-type: none"> Gemcitabine/cisplatin (Category 1) followed by avelumab maintenance therapy (Category 1) DDMVAC with growth factor (Category 1) support followed by avelumab maintenance therapy (Category 1) 	Cisplatin-based CT [I, A] followed by maintenance avelumab for tumors which have not progressed on CT [I, A]		Gemcitabine/cisplatin or DDMVAC, followed by avelumab maintenance for tumors which have not progressed on CT (Strong)
Cisplatin-INELIGIBLE	<ul style="list-style-type: none"> Gemcitabine/carboplatin (Category 2A) followed by avelumab maintenance therapy (Category 1) Atezolizumab (Category 2A) Pembrolizumab (Category 2A) 	PD-L1-unknown or -negative	PD-L1-positive	<ul style="list-style-type: none"> Gemcitabine/carboplatin, followed by avelumab maintenance for tumors which have not progressed on CT (Strong) Pembrolizumab or atezolizumab (Weak)
		Gemcitabine/ carboplatin [II, B] followed by maintenance avelumab for tumors which have not progressed on CT [I, A]	<ul style="list-style-type: none"> Gemcitabine/ carboplatin [II, B] followed by maintenance avelumab for tumors which have not progressed on CT [I, A] Atezolizumab or pembrolizumab [III, B] 	

Also recommended **NICE**⁴
by National Institute for Health and Care Excellence

CT, chemotherapy; EAU, European Association of Urology; ESMO, European Society for Medical Oncology; EV, enfortumab vedotin; FGFR, fibroblast growth factor receptor; ICI, immune checkpoint inhibitory; NCCN, National Comprehensive Cancer Network; PD-1, programmed cell death protein 1; PD-L1, programmed death-ligand
 1. NCCN Clinical Practice Guidelines in Oncology. Bladder Cancer. V2. 2021; 2. Bladder cancer: ESMO Clinical Practice Guidelines for diagnosis, treatment and follow-up 2014. eUpdate – Bladder Cancer Treatment Recommendations. July 2020. Available at: <https://www.esmo.org/guidelines/genitourinary-cancers/bladder-cancer/eupdate-bladder-cancer-treatment-recommendations4> (accessed July 2020); 3. EAU guidelines on muscle-invasive and metastatic bladder cancer March 2021. Available at <https://uroweb.org/wp-content/uploads/EAU-Guidelines-on-Muscle-Invasive-and-Metastatic-Bladder-Cancer-2021.pdf> (accessed May 2021). 4. Nice guidelines recommendations 11 May 2022, <https://www.nice.org.uk/guidance/ta788/chapter/1-Recommendations>

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Patient segment and new SoC in 1L mUC

Patient



Cisplatin eligible

Cisplatin-based CT >> Avelumab maintenance



Cisplatin ineligible

Carboplatin-based CT >> Avelumab maintenance



Platinum ineligible

IO monotherapy

Platinum ineligibility based on Gupta criteria: Any mUC pt meeting one the following 5 parameters should be considered "platinum-ineligible": ECOG PS \geq 3; Cr Cl $<$ 30 ml/min; peripheral neuropathy \geq Grade 2; NYHA Heart Failure Class $>$ 3; ECOG PS 2 AND Cr Cl $<$ 30 ml/min
Gupta S, et al. Journal of Clinical Oncology 40, no. 16_suppl (June 01, 2022) 4577-4577



THANK YOU