

Updates in Genitourinary Malignancies: Urothelial Cancers

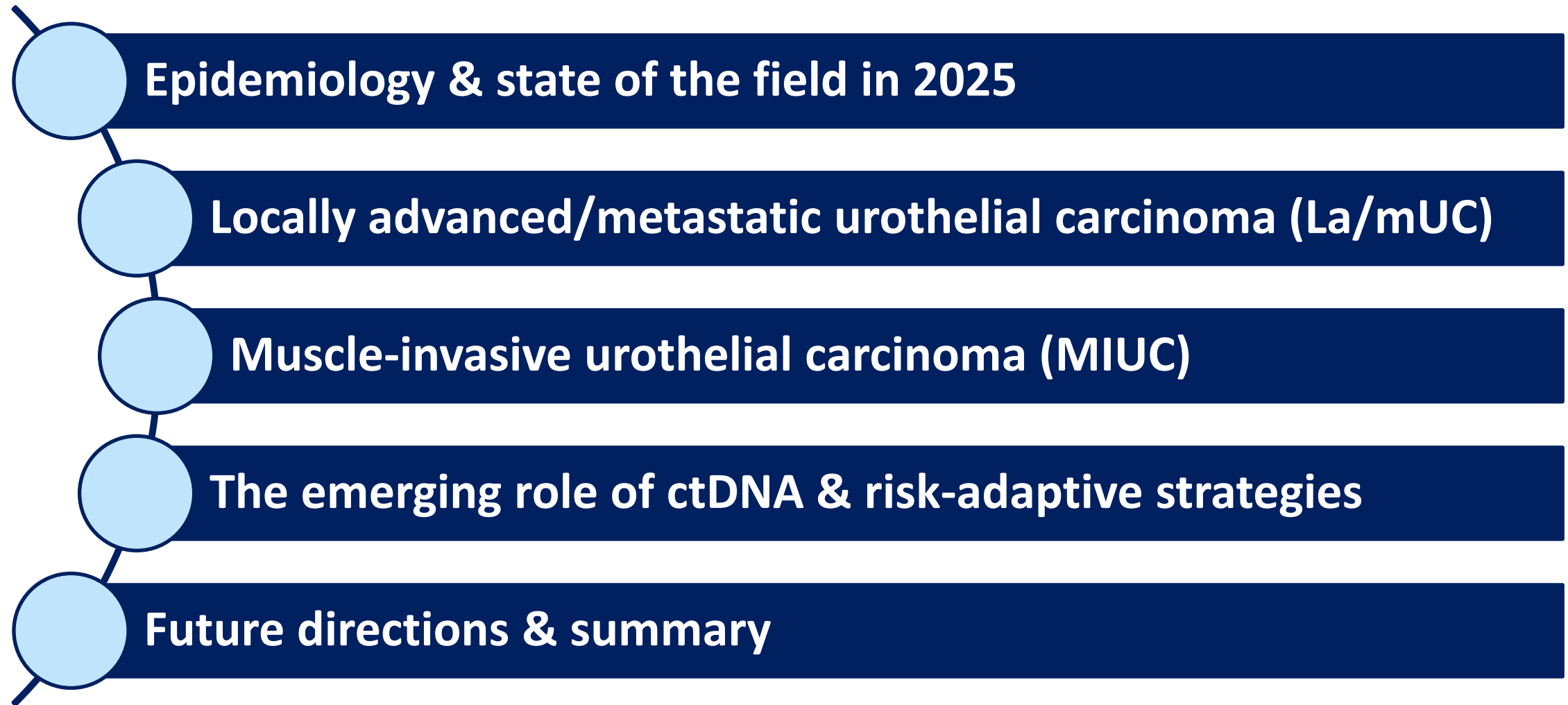
The 7th Annual LEAD Conference

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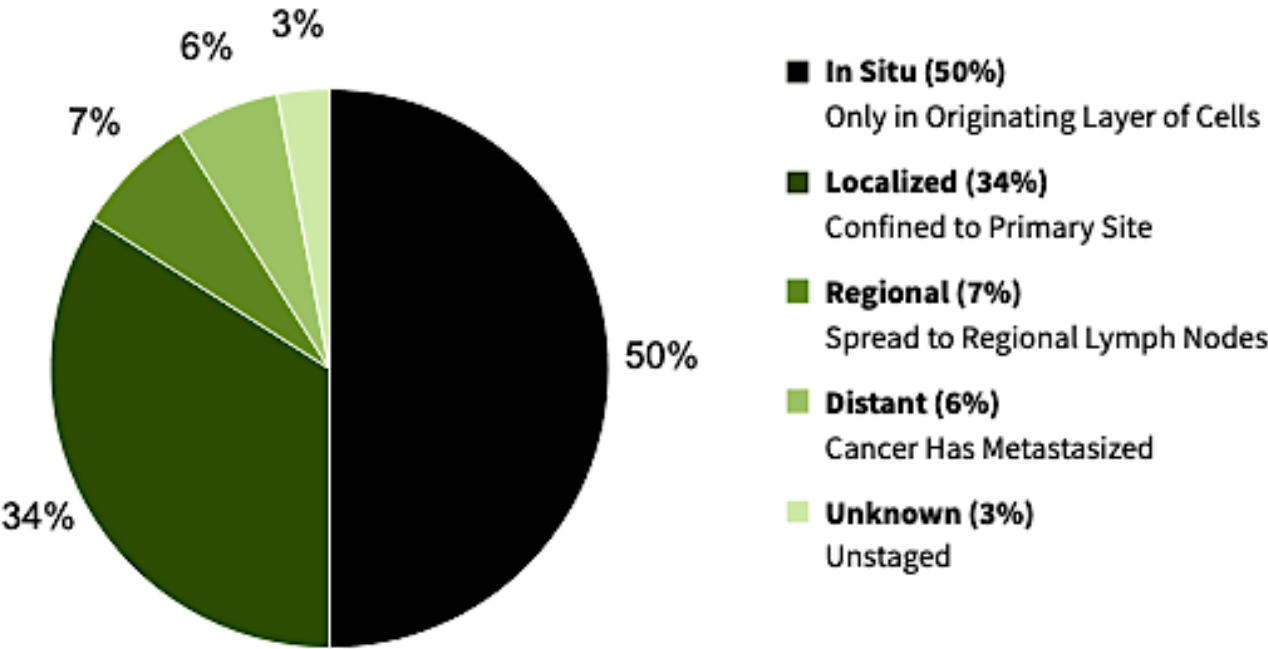
September 27, 2025

OUTLINE



EPIDEMIOLOGY OF BLADDER CANCER

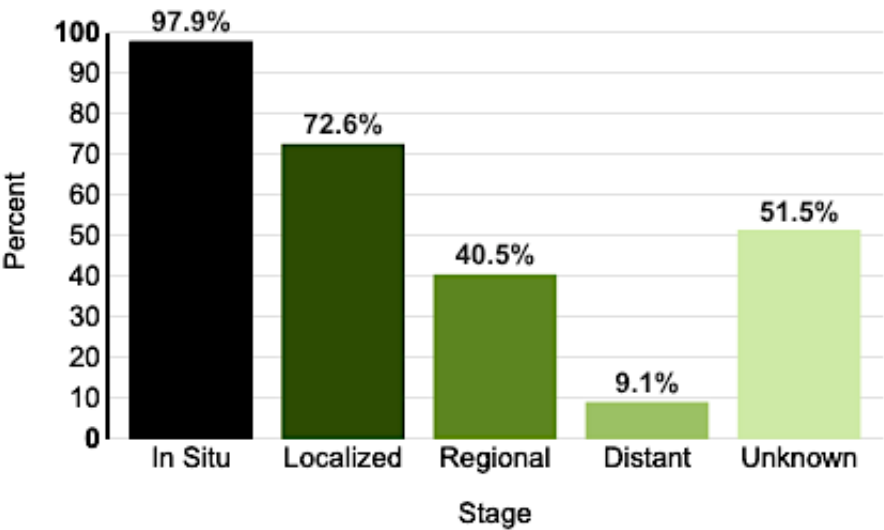
Percent of Cases by Stage



Estimated New Cases in 2025	84,870
% of All New Cancer Cases	4.2%

Estimated Deaths in 2025	17,420
% of All Cancer Deaths	2.8%

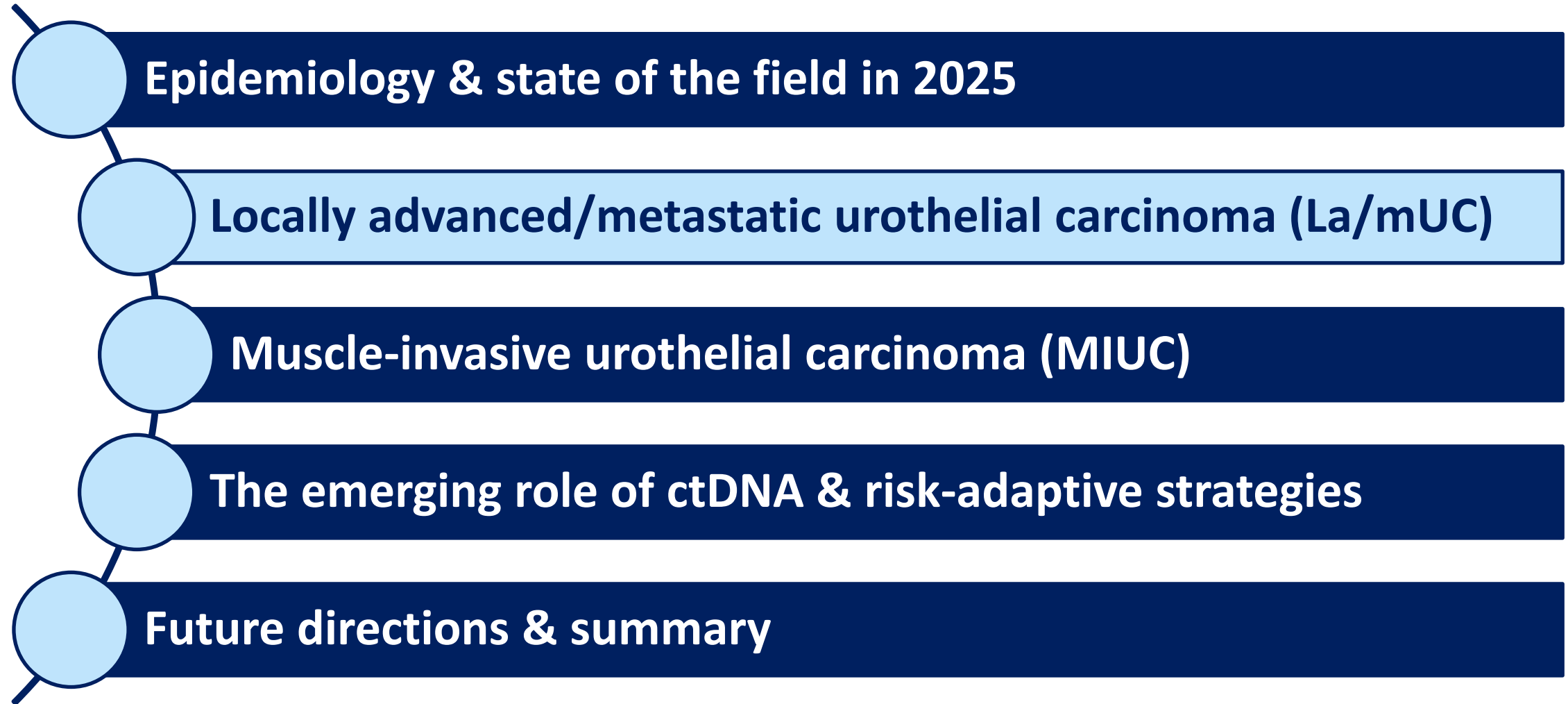
5-Year Relative Survival



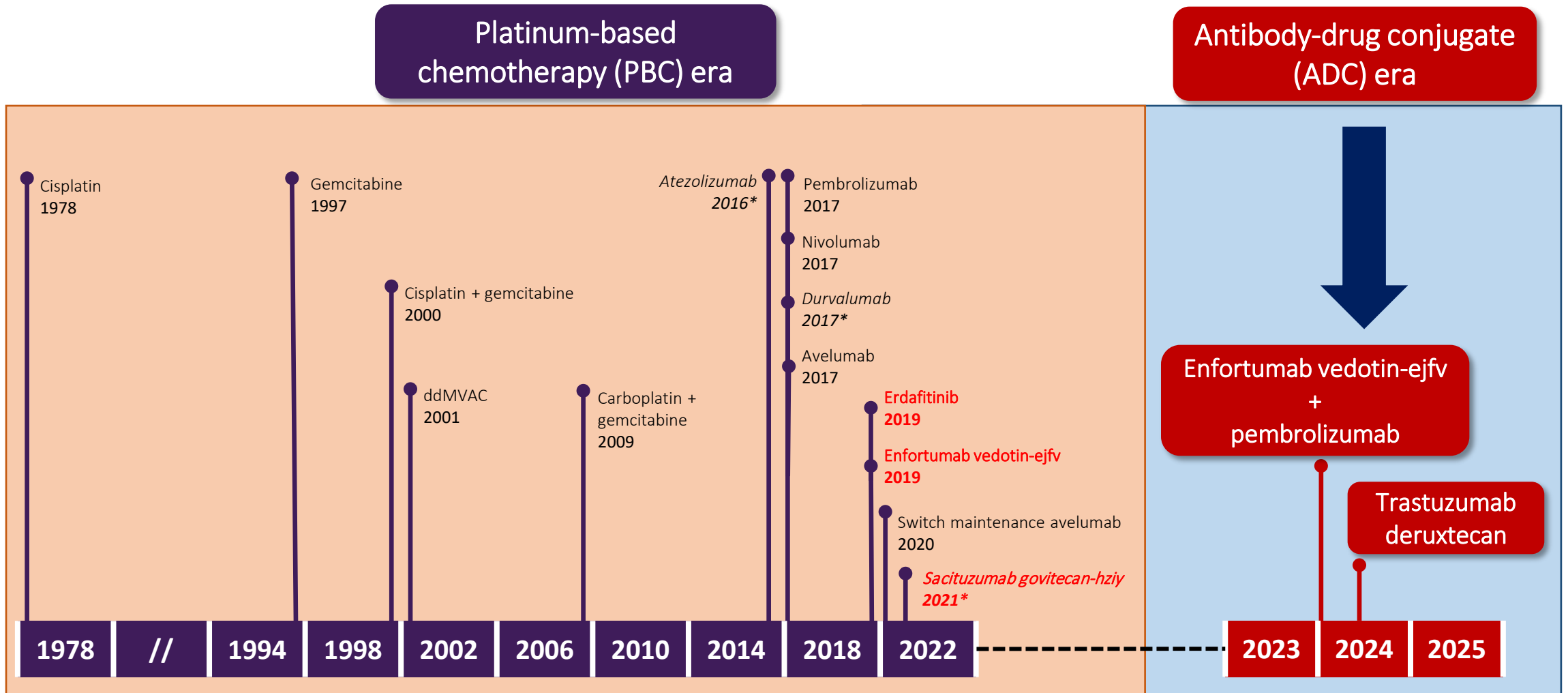
STATE OF THE FIELD IN 2025

- **La/mUC:**
 - **1L setting:** 2.5-year follow up data from EV-302 reinforce EV + pembrolizumab as 1L SOC
 - **Maintenance setting:** JAVELIN Bladder Medley investigating intensified maintenance with avelumab ± SG post platinum chemo → how to position in a rapidly evolving landscape?
- **Perioperative MIUC setting:** Current SOC in cisplatin-eligible patients is chemo + IO → early data emerging for ADC + IO regimens in the perioperative setting
- **Emerging role of ctDNA:** ctDNA is redefining perioperative management, enabling risk-stratified precision therapy → upcoming trial readouts including IMvigor011 set to guide clinical integration
- **Key questions & future directions:**
 - Optimal sequencing after EV+P and perioperative IO?
 - Is there a role for consolidative surgery or radiation in La/mUC disease states?
 - Risk-adaptive perioperative trials using clinical and molecular biomarkers to refine patient selection

OUTLINE

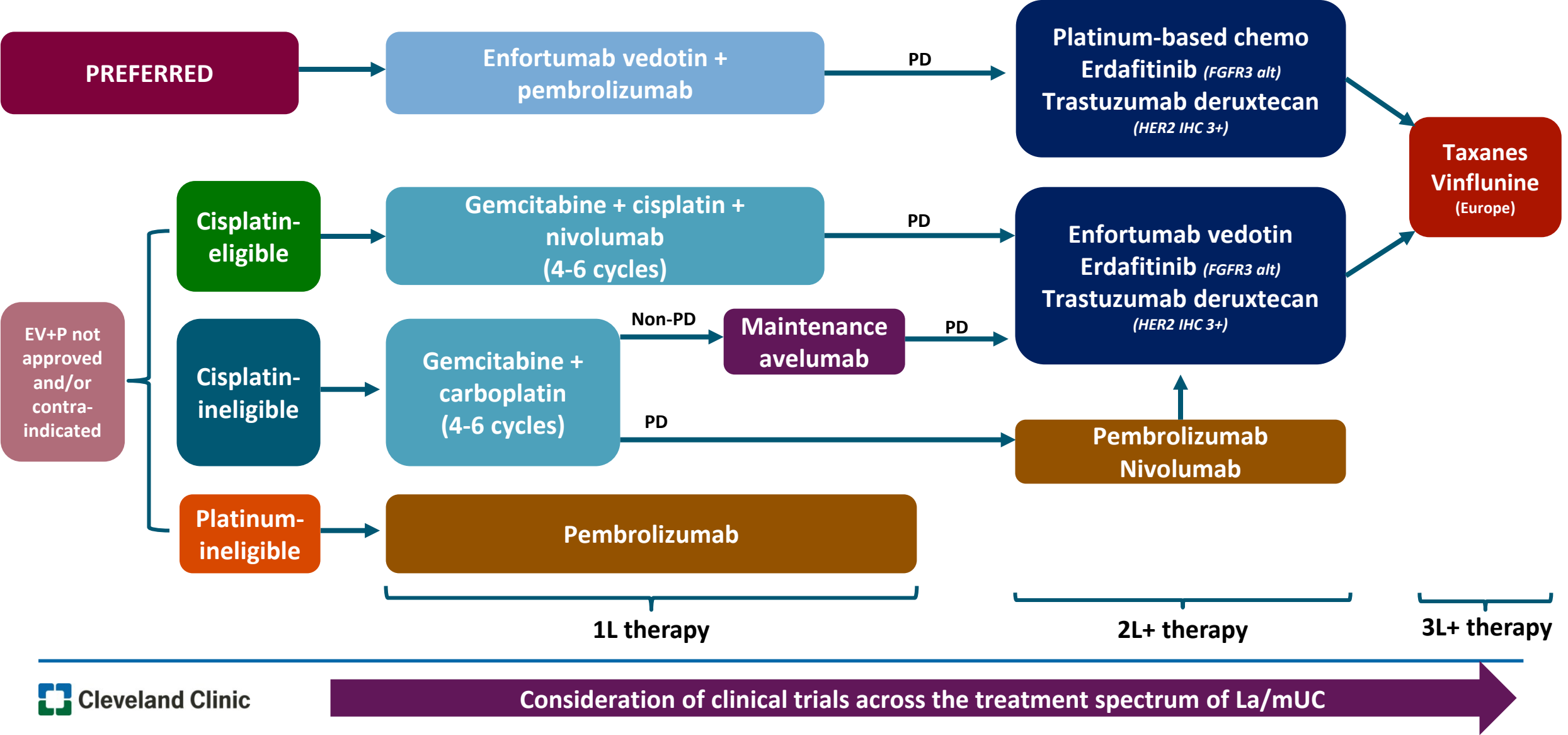


THE ERA OF NOVEL THERAPEUTICS IN La/mUC



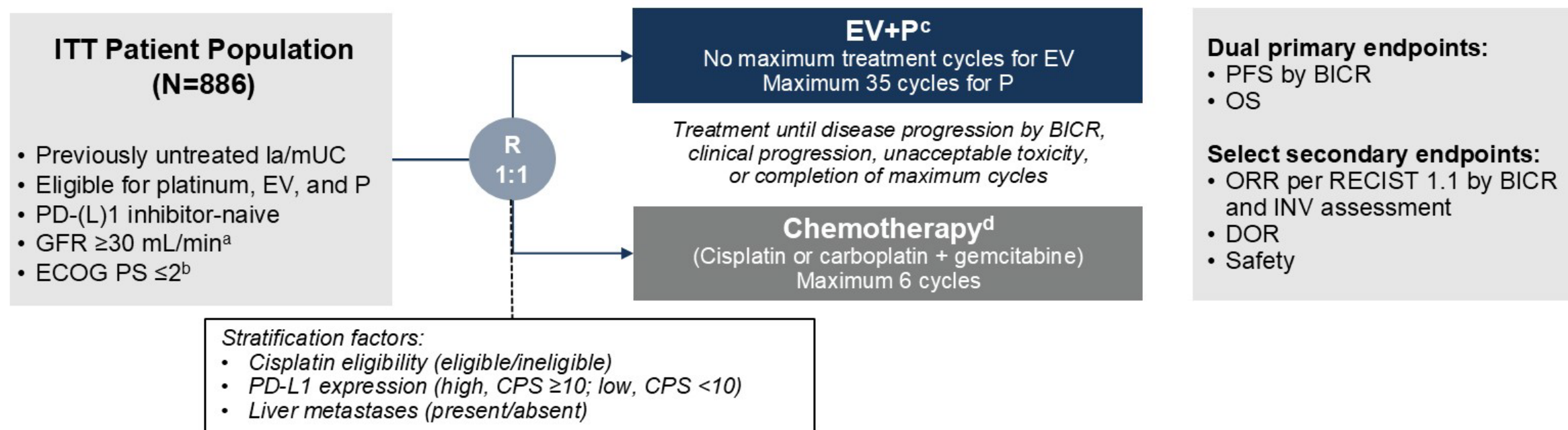
*FDA approval voluntarily withdrawn due to confirmatory Phase III trials not meeting primary endpoints

La/mUC TREATMENT ALGORITHM IN 2025

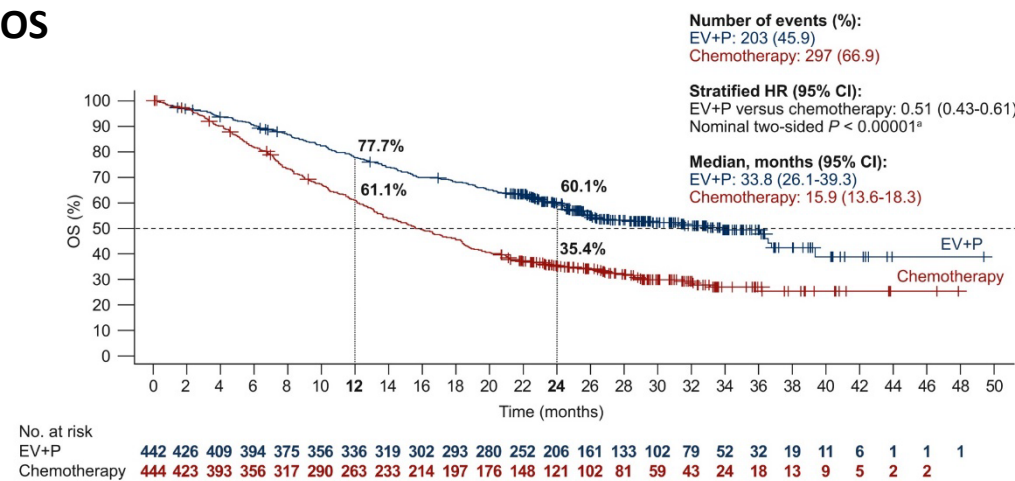
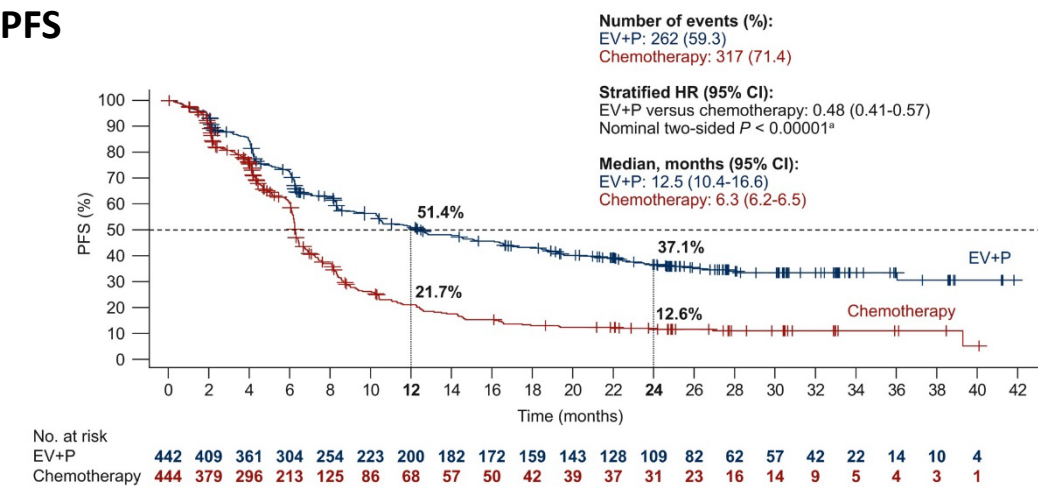


ENFORTUMAB VEDOTIN + PEMBROLIZUMAB

EV-302/KEYNOTE-A39: a phase 3 international, randomized trial (NCT04223856)



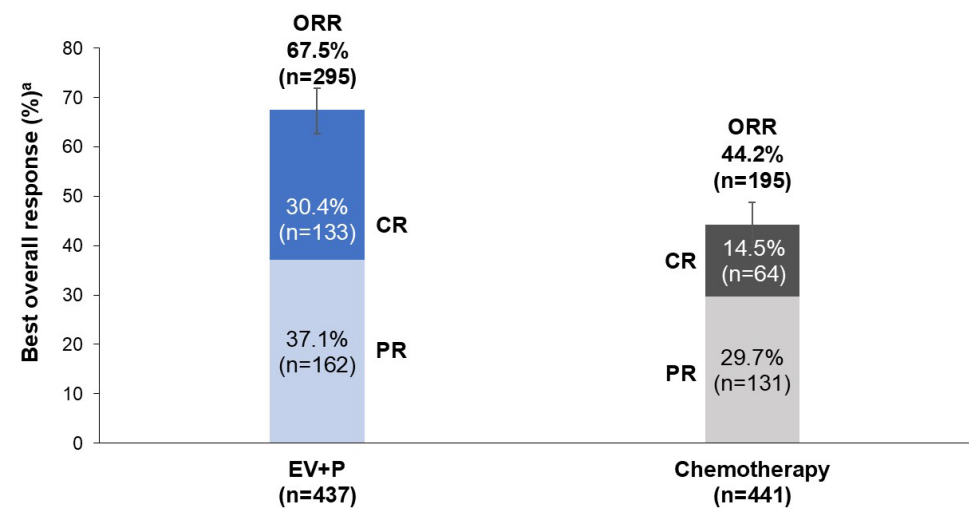
EV-302: UPDATED EFFICACY AT 2.5 YEARS



	EV+P (n=442)	Chemo (n=444)	95% CI	p-value
ORR	67.5%	44.2%	--	<0.00001
Median DoR, mos	23.3	7.0	EV+P: 17.8-NE Chemo: 6.2-9.0	N/A
Median PFS, mos	12.5	6.3	HR 0.48 (0.41-0.57)	<0.00001
Median OS, mos	33.8	15.9	HR 0.51 (0.43-0.61)	<0.00001

- Median follow up: 29 months
- Complete response (cCR): 30.4% vs 14.5%
- Durable separation of PFS and OS curves maintained over time
- **Data reinforce EV+P as SOC for 1L La/mUC**

EV-302: EXPLORATORY ANALYSIS OF RESPONDERS



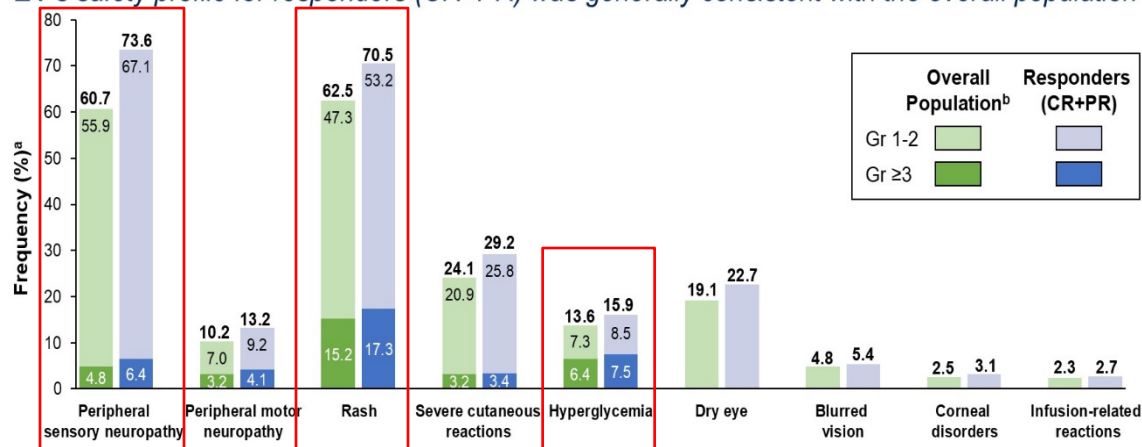
- Baseline features similar between responders (CR+PR) and ITT population
- DoR favors EV+P regardless of cisplatin eligibility (~60% cisplatin eligible in CR+PR groups)
- No validated biomarker predicts EV+P benefit
- **Collectively, data reinforce EV+P as SOC for 1L La/mUC**

	Responders (CR+PR)			Patients with CR		
	EV+P (n=295)	Chemo (n=195)	95% CI	EV+P (n=133)	Chemo (n=64)	95% CI
Median DoR, mos	23.3	7.0	EV+P: 17.8-NE Chemo: 6.2-9.0	NE	15.2	EV+P: NE-NE Chemo: 10.3-NE
Probability of maintained response at 24 mos	49.4%	24.0%	--	74.3%	43.2%	--
Median OS, mos	39.3	32.1	HR 0.59 (0.44-0.79)	NE	NE	HR 0.37 (0.17-0.80)
2-year OS probability	76.3%	59.8%	--	95.4%	85.8%	--

EV-302: TREATMENT-RELATED AEs & MANAGEMENT

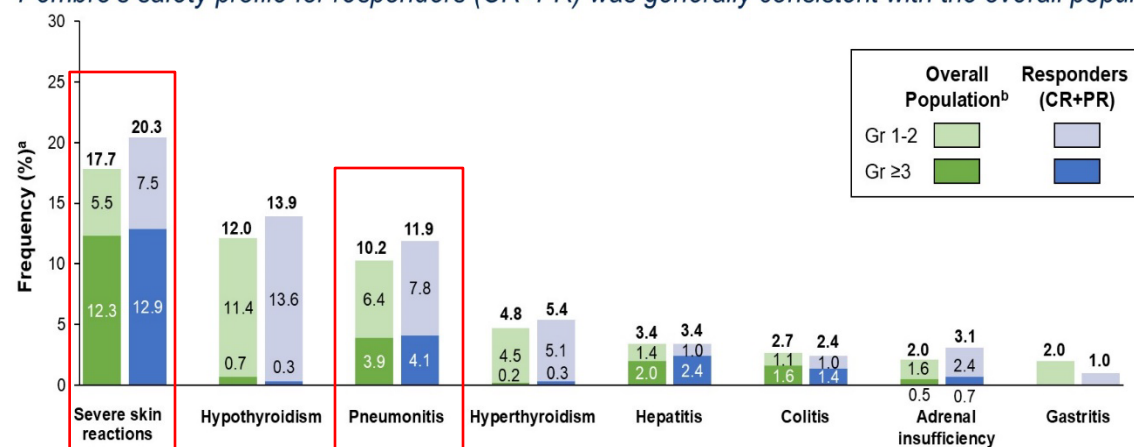
Treatment-related AEs of special interest for EV (EV+P arm)

EV's safety profile for responders (CR+PR) was generally consistent with the overall population



Treatment-emergent AEs of special interest for pembro (EV+P arm)

Pembro's safety profile for responders (CR+PR) was generally consistent with the overall population



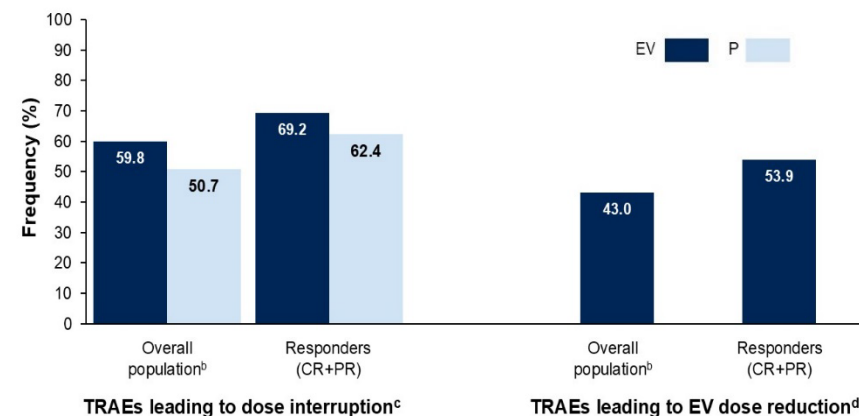
Overall population:

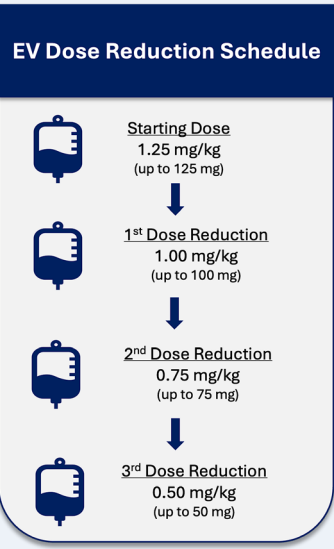
- Median EV+P duration: 12 cycles (range, 1-54)
- Median EV duration: 7.1 months (9 cycles)
- Median pembrolizumab duration: 8.5 months (11 cycles)

Responders (CR+PR):

- Median EV+P duration: 19 cycles (range, 1-54)
- Median EV duration: 9.7 months (12 cycles)
- Median pembrolizumab duration: 13.2 months (17 cycles)

Dose modifications were common among responders with longer treatment duration



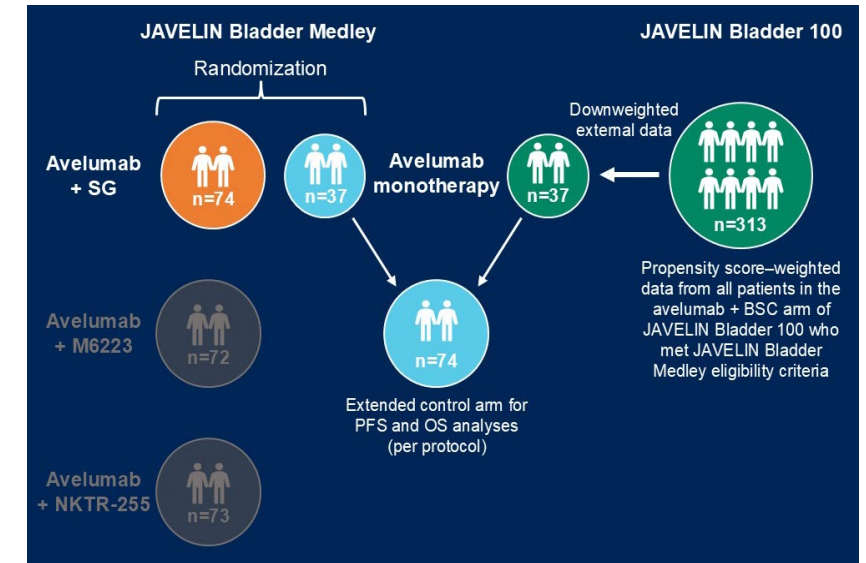
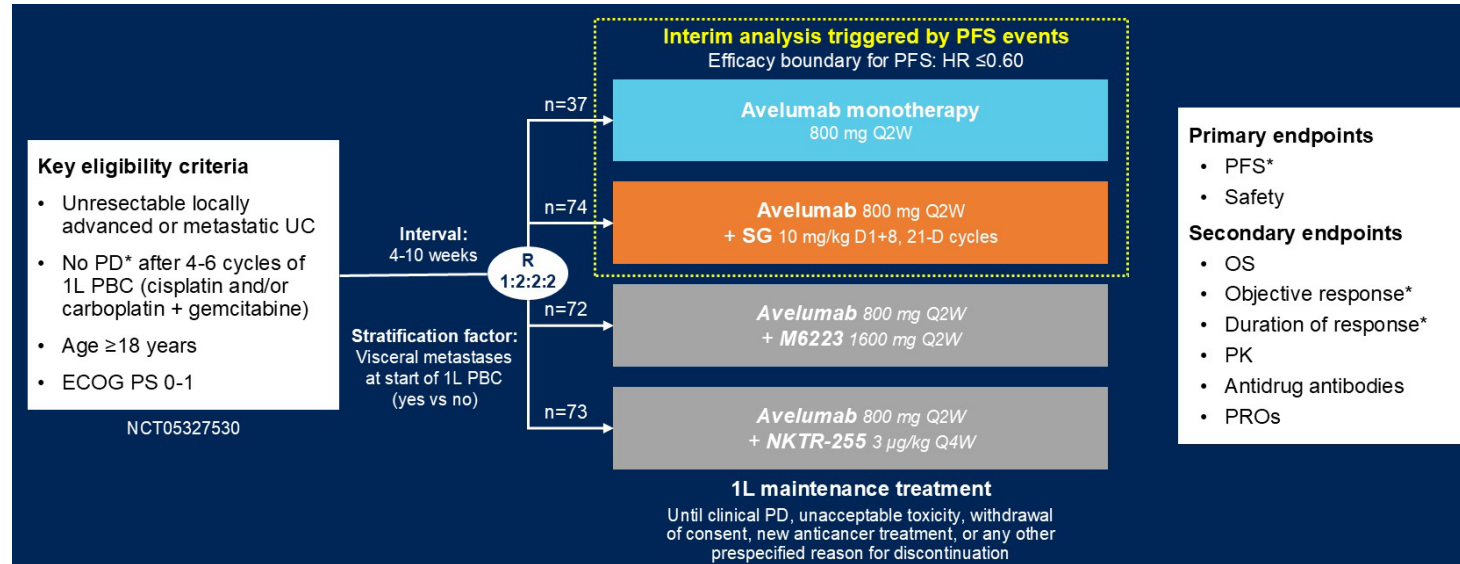
EV TOXICITY	 SKIN REACTIONS (including SJS/TEN)	 NEUROPATHY (sensory and motor)	 HYPERGLYCEMIA	 PNEUMONITIS/ ILD
Median time to onset, months (range) ¹	1.7 (0.1 – 17.2)	6.0 (0.3 – 25.0)	0.5 (0.3 – 3.5)	4.0 (0.3 – 26.2)
Incidence ¹	All-grade: 70% ≥ G3: 17%	All-grade: 63% ≥ G3: 7%	All-grade: 13% ≥ G3: 9%	All-grade: 10% ≥ G3: 4%
Grading per CTCAE v5.0 ^{2*}	G1: <10% BSA w/ or w/o symptoms G2: 10-30% BSA w/ or w/o symptoms G3: >30% BSA with moderate or severe symptoms limiting ADLs G4: life-threatening with any % BSA  SJS: Skin sloughing w/ epidermal or mucous membrane detachment (G3: <10% BSA; G4: 10-30% BSA; TEN (G4): >30% BSA)	G1: mild symptoms G2: moderate symptoms limiting instrumental ADLs G3: severe symptoms limiting self-care ADLs; assistance required G4: life-threatening requiring urgent intervention	G1: elevated glucose; no medical intervention G2: change in baseline mgmt for DM; oral antidiabetic initiated G3: insulin initiated; hospitalization indicated G4: life-threatening requiring urgent intervention	G1: Asymptomatic; clinical or diagnostic observations G2: symptomatic requiring medical intervention G3: severe symptoms requiring oxygen  G4: life-threatening with respiratory compromise requiring airway intervention
Management³ EV Dose Reduction Schedule 	G1-G2: - Topical steroids and/or antihistamines - Hold EV if needed → resume same dose G2 with fever or G3: - Hold EV until ≤ G1 - Refer to Derm - Resume EV at same dose or reduce by one level  Suspected SJS/TEN or bullous lesions: - Hold EV and immediately refer to Derm  Recurrent G3, G4, or confirmed SJS/TEN: - Discontinue EV permanently	G2: - Hold EV until ≤ G1 1st occurrence: resume EV at same dose level - Recurrence: resume EV, but reduce by one level ≥ G3: - Discontinue EV permanently	Check baseline HgbA1c Blood glucose > 250 mg/dL: - Hold EV - Treat with insulin/oral agents as indicated - Resume EV at same dose level once BG ≤ 250 mg/dL Poor glucose control: - Refer to Endocrinology for optimization of antidiabetic regimen  G4 (e.g., DKA): - Discontinue EV permanently	G2: - Hold EV until ≤ G1 - Resume EV at same dose or reduce by one level - Refer to Pulm ≥ G3 or recurrent G2: - Discontinue EV permanently - Refer to Pulm

*AEs in EV-302 were graded using CTCAE v4.03.

1. Powles T. N Engl J Med. 2024. 2. U.S. Department of HHS. CTCAE Version 5.0. 2017. 3. U.S. FDA. PADCEV® (enfortumab vedotin-efv) for injection, for intravenous use. 2025.

MAINTENANCE INTENSIFICATION IN La/mUC

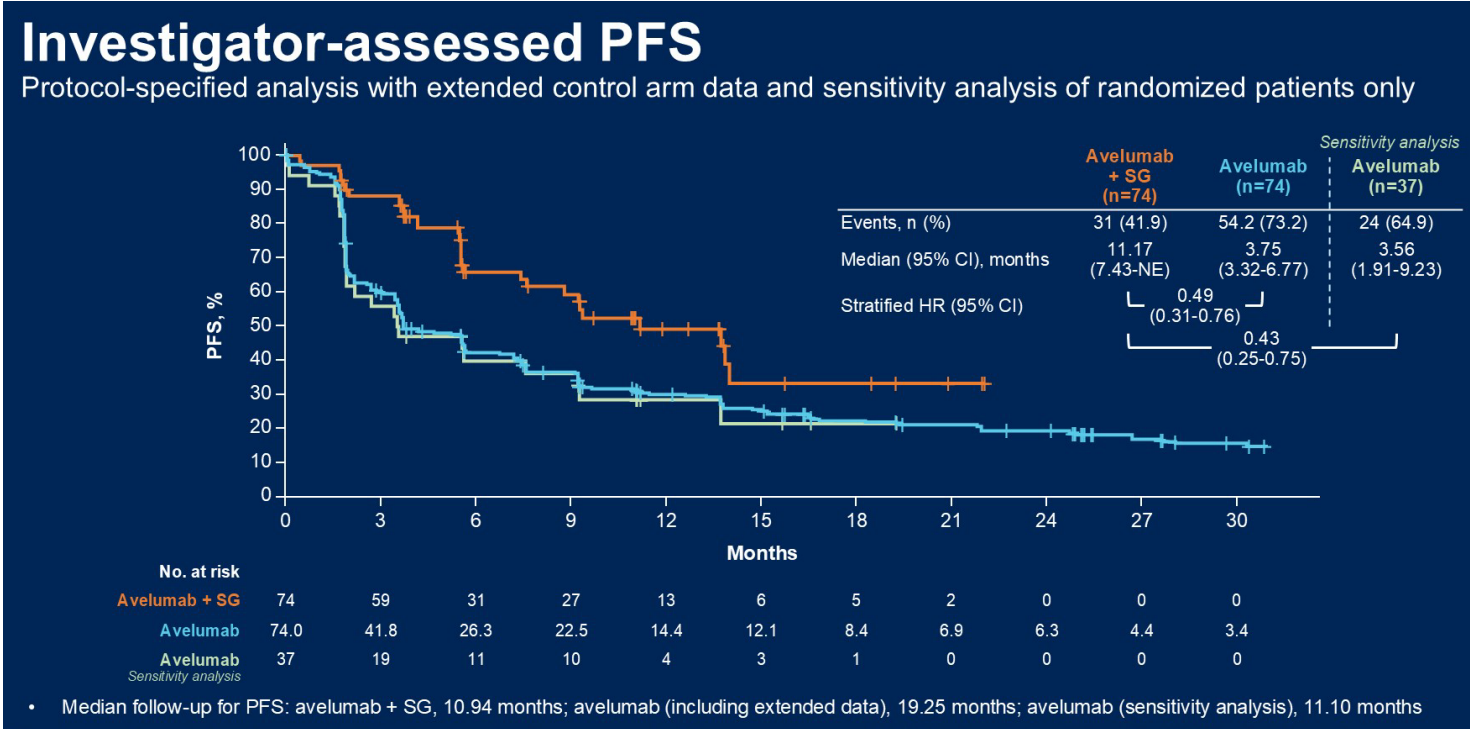
JAVELIN Bladder Medley: a phase 2 international, randomized trial (NCT05327530)



Design:

- 1L platinum-based chemo x4-6 cycles without PD → maintenance avelumab ± SG until PD or unacceptable toxicity
- Per protocol, PFS and OS data in the control arm were extended using external data from the JAVELIN Bladder 100 phase 3 trial; external patients were propensity-score weighted based on predefined prognostic factors

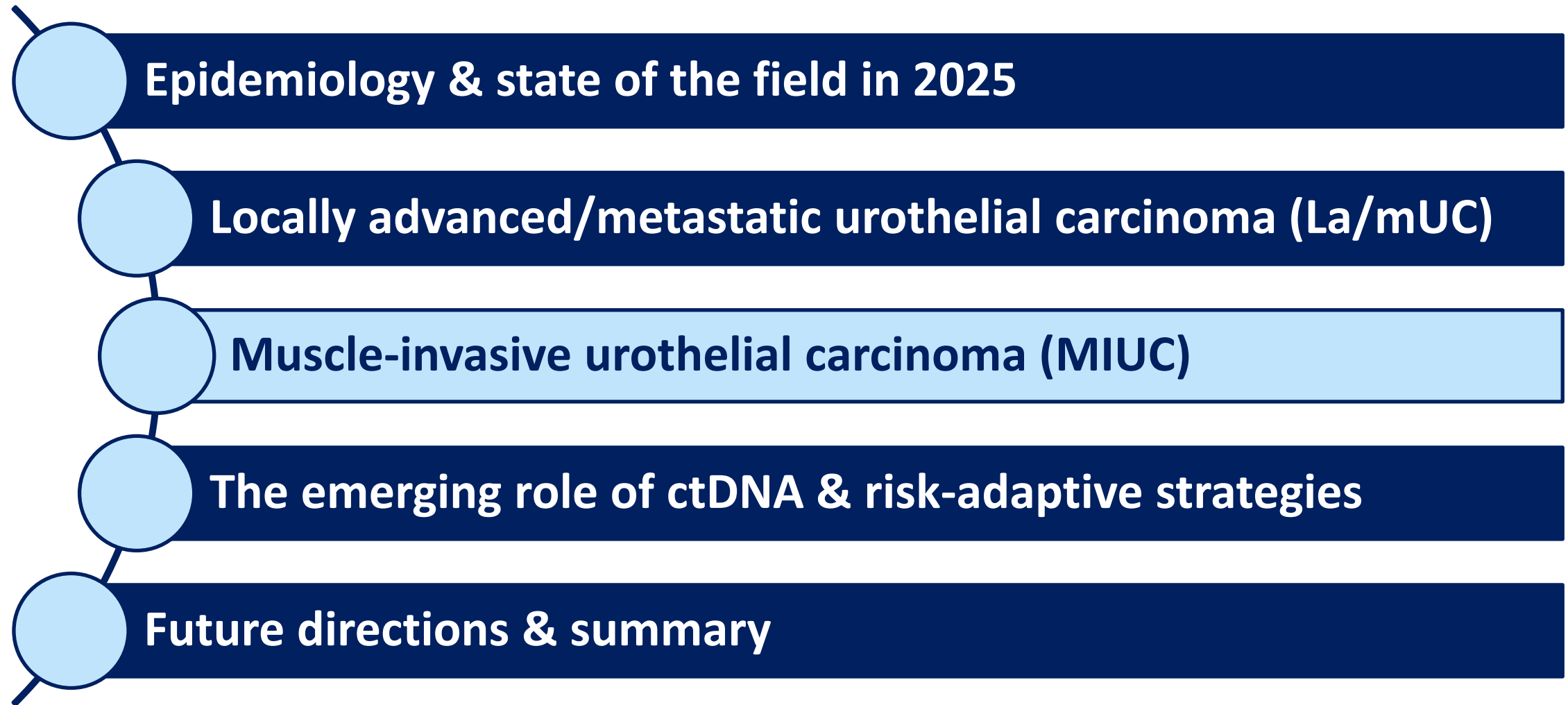
MAINTENANCE INTENSIFICATION IN La/mUC



- **Interim analysis: higher ORR and PFS trend with combination**
- cCR: 6.8% vs 2.7%
- OS immature at data cutoff
- Safety population: Avelumab + SG (n=73) vs avelumab (n=36)
- **G3 TRAEs: 70% vs 0%**
 - Neutropenia (40%)
 - Decreased ANC (23%)
 - Diarrhea (12%)
 - Febrile neutropenia (11%)
- **1 SG-related death: acute SAH in setting of sepsis and pancytopenia**

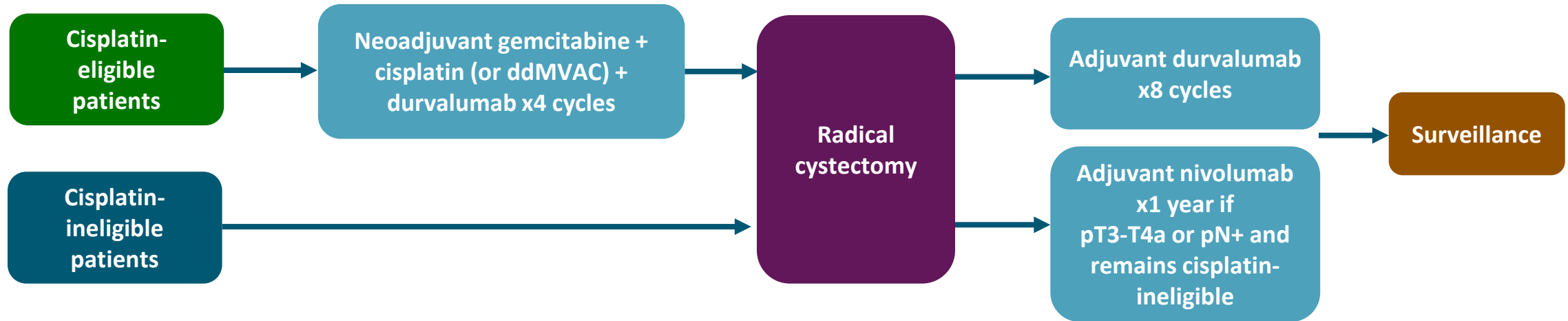
	Avelumab + SG (n=74)	Avelumab (n=37 for ORR; n=74 for PFS/OS)	95% CI
ORR	24.3%	2.7%	Avelumab + SG: 15.1-35.7 Avelumab: 0.1-14.2
Median PFS, mos	11.2	3.8	HR 0.49 (0.3-0.8)
Median OS, mos	Immature at time of data cutoff		

OUTLINE

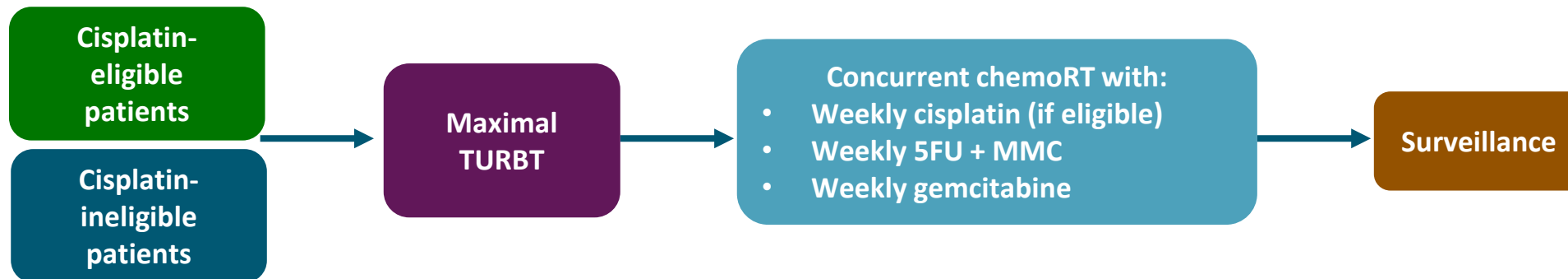


MIUC TREATMENT ALGORITHM IN 2025

RADICAL CYSTECTOMY

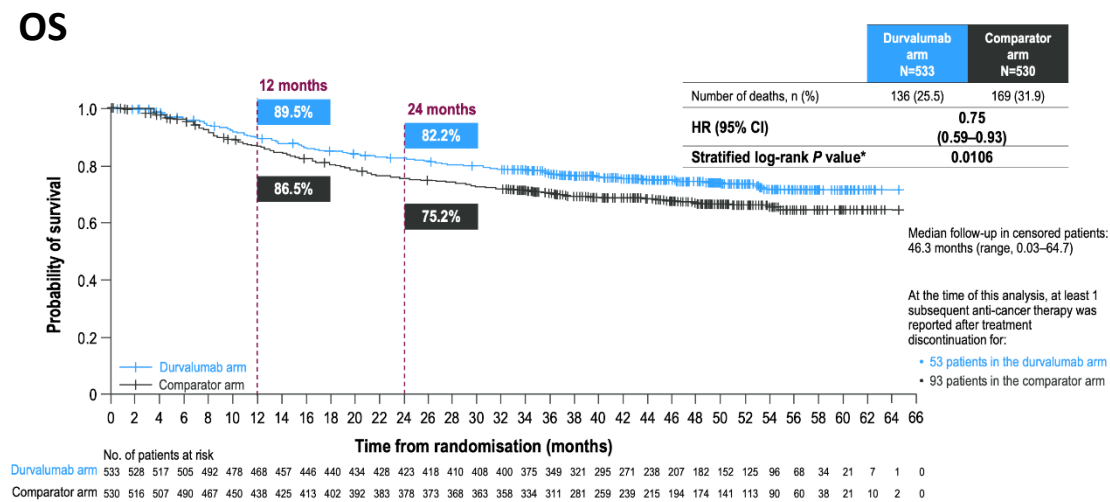
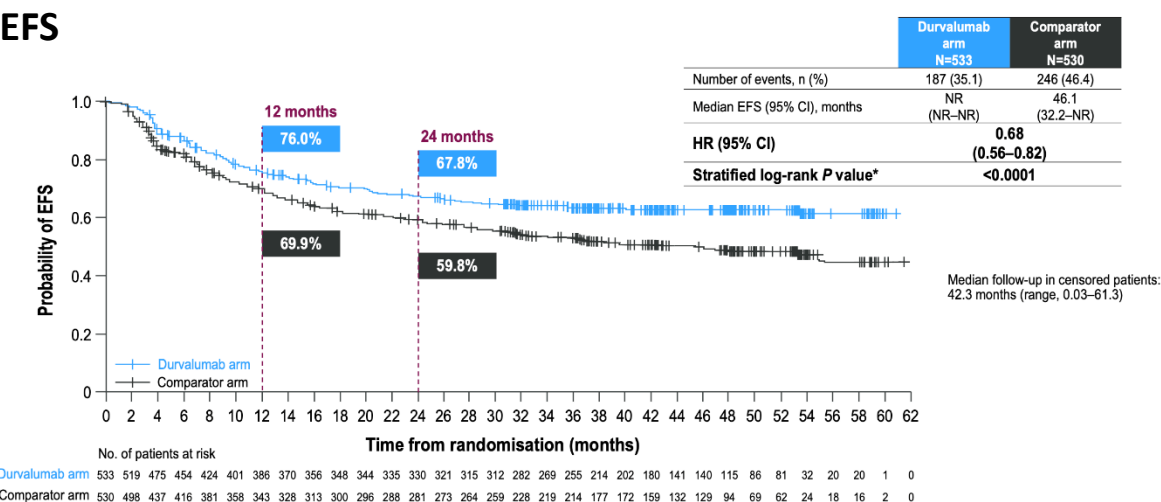
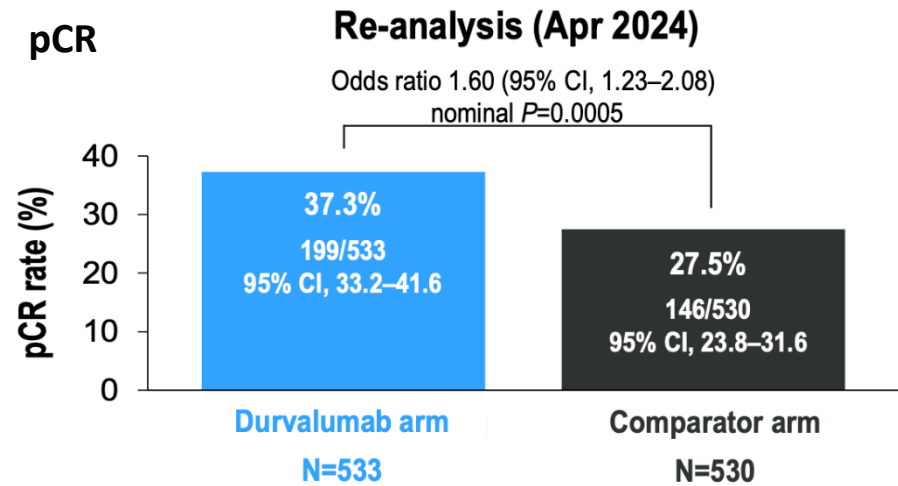
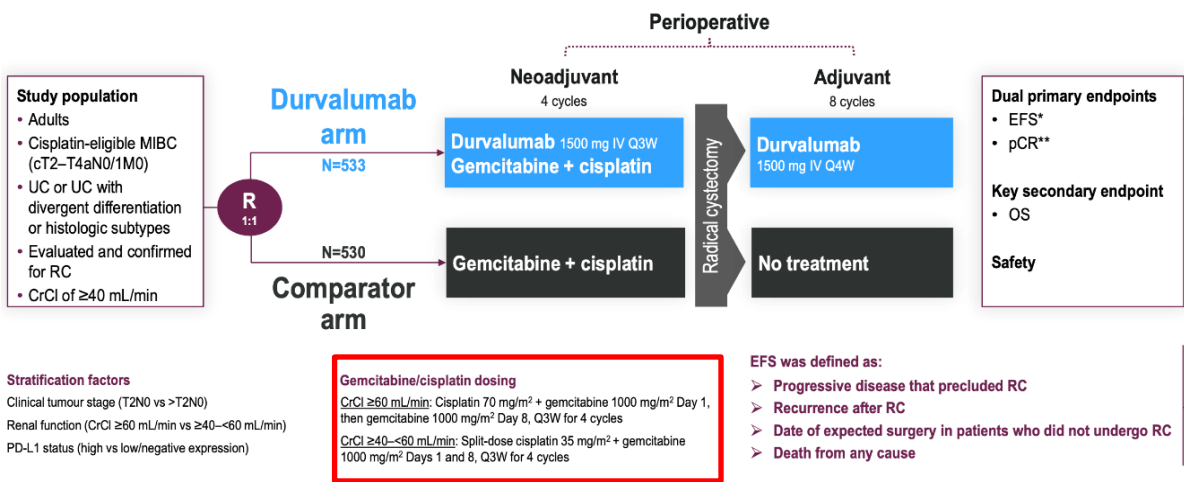


BLADDER-SPARING ChemoRT (select patients)



NIAGARA: PERIOPERATIVE SOC IN CIS-ELIGIBLE MIUC

NIAGARA: a phase 3 international, randomized trial (NCT03732677)^{1,2}



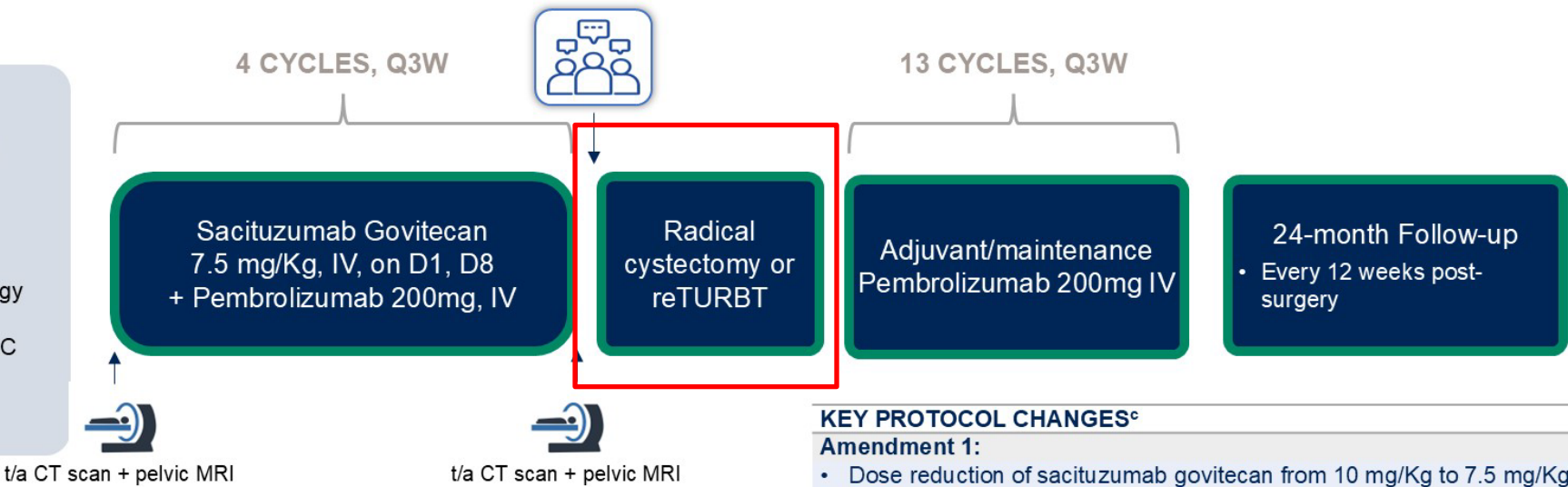
SURE-02: SG + PEMBRO IN CIS-INELIGIBLE/DECLINED MIUC

SURE-02: a phase 2, single-arm trial (NCT05535218)

NCT05535218

Population:

- Aged ≥18 years
- Histologically confirmed cT2-T3b N0M0 MIBC (absence of nodal or metastatic disease at screening)
- Predominant UC histology
- ECOG PS of 0-1
- Ineligible or refusing NAC
- Ineligible or refusing chemoRT
- Scheduled for RC



Primary endpoint:

- Clinical CR rate (imaging CR + ypT0Nx)

Secondary endpoints:

- Efficacy: any downstaging rate, EFS^a, MFS, BI-EFS^b, OS, after neoadjuvant treatment
- Safety (CTCAE v.5.0)

Exploratory endpoints

- Biomarkers of response
- Changes in biomarker expression
- Microbiome data in urine and feces

KEY PROTOCOL CHANGES^c

Amendment 1:

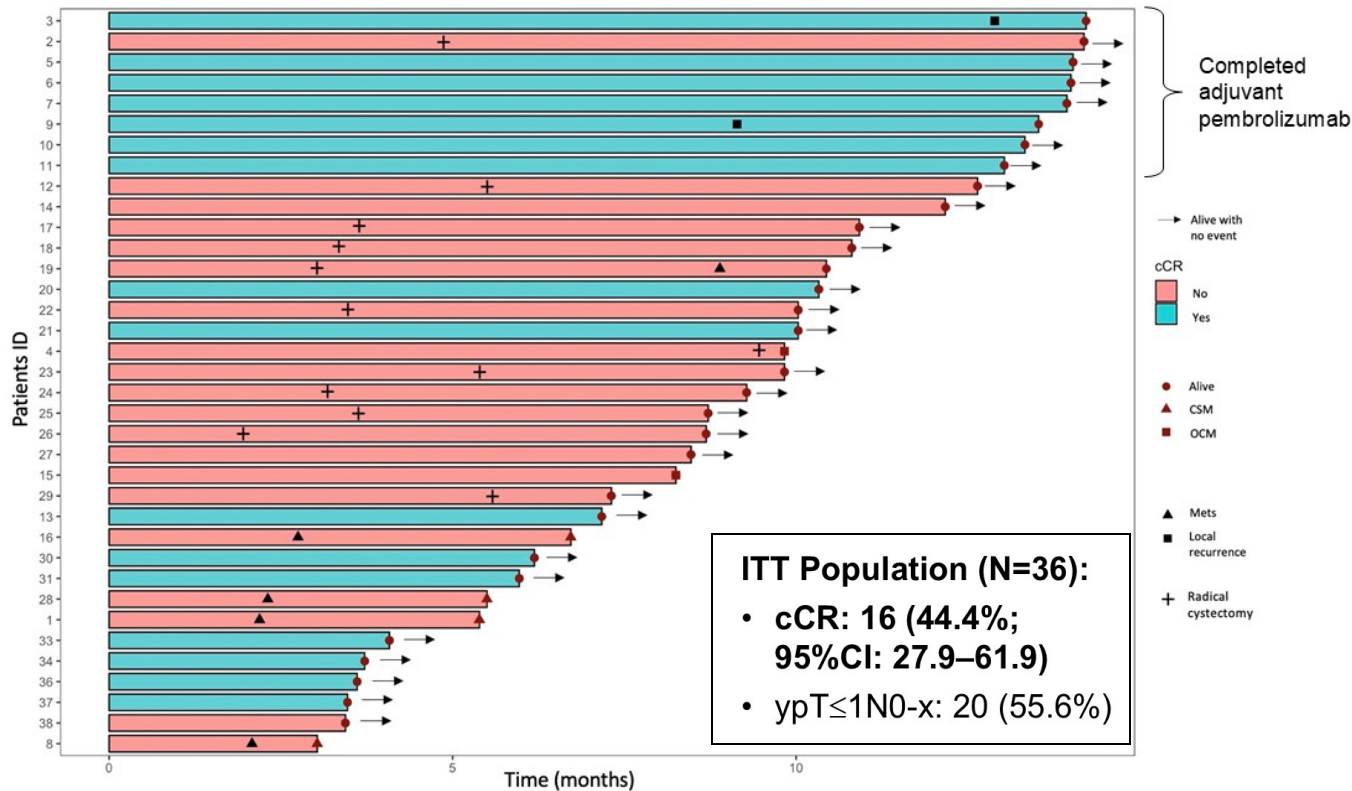
- Dose reduction of sacituzumab govitecan from 10 mg/Kg to 7.5 mg/Kg from C1D1.
- Introduction of G-CSF use (Peg-GCSF) as primary prophylaxis since C1D9.
- Exclusion of patients who had ≥3 risk factors for febrile neutropenia as indicated by the ASCO guidelines.^d

Amendment 2:

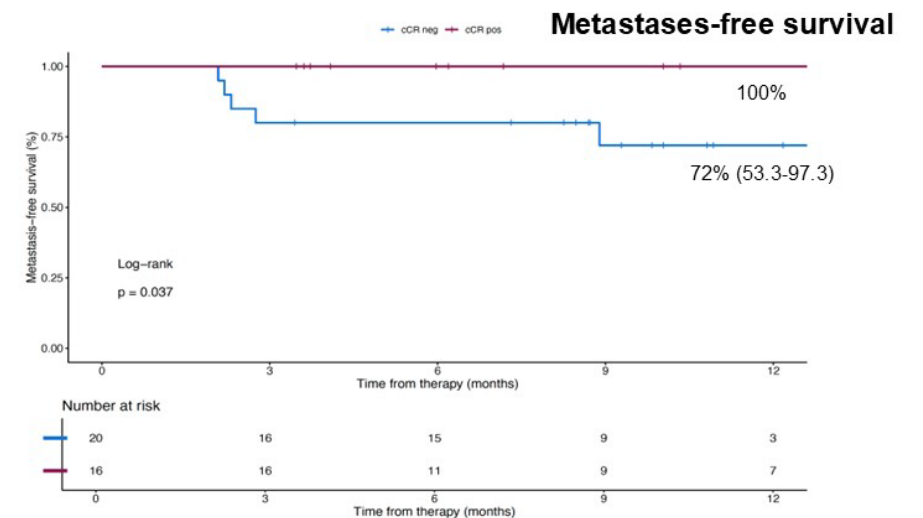
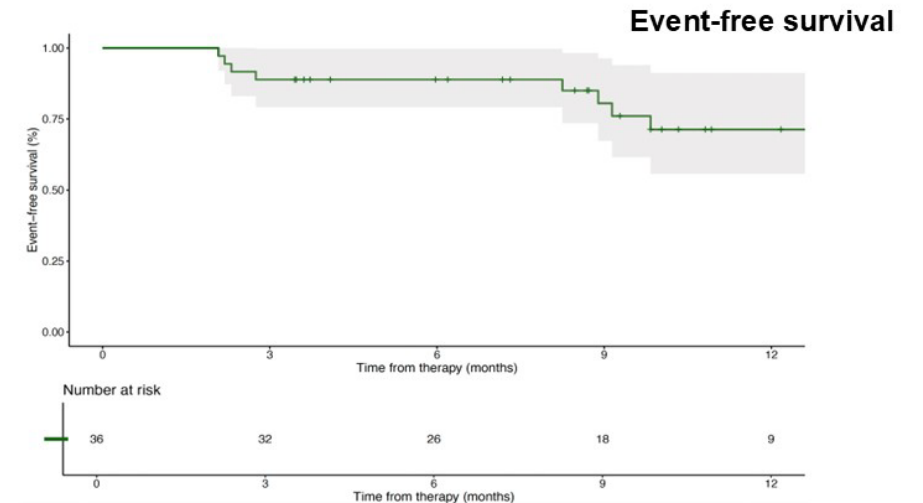
- Change in primary endpoint from ypT0N0 rate to cCR rate (no change in sample size and statistical plan)
- Addition of a further inclusion criterion:
 - ChemoRT refusing/unsuited patients
- Restriction to cT2-T3bN0M0 patients.

SURE-02: SG + PEMBRO IN CIS-INELIGIBLE/DECLINED MIUC

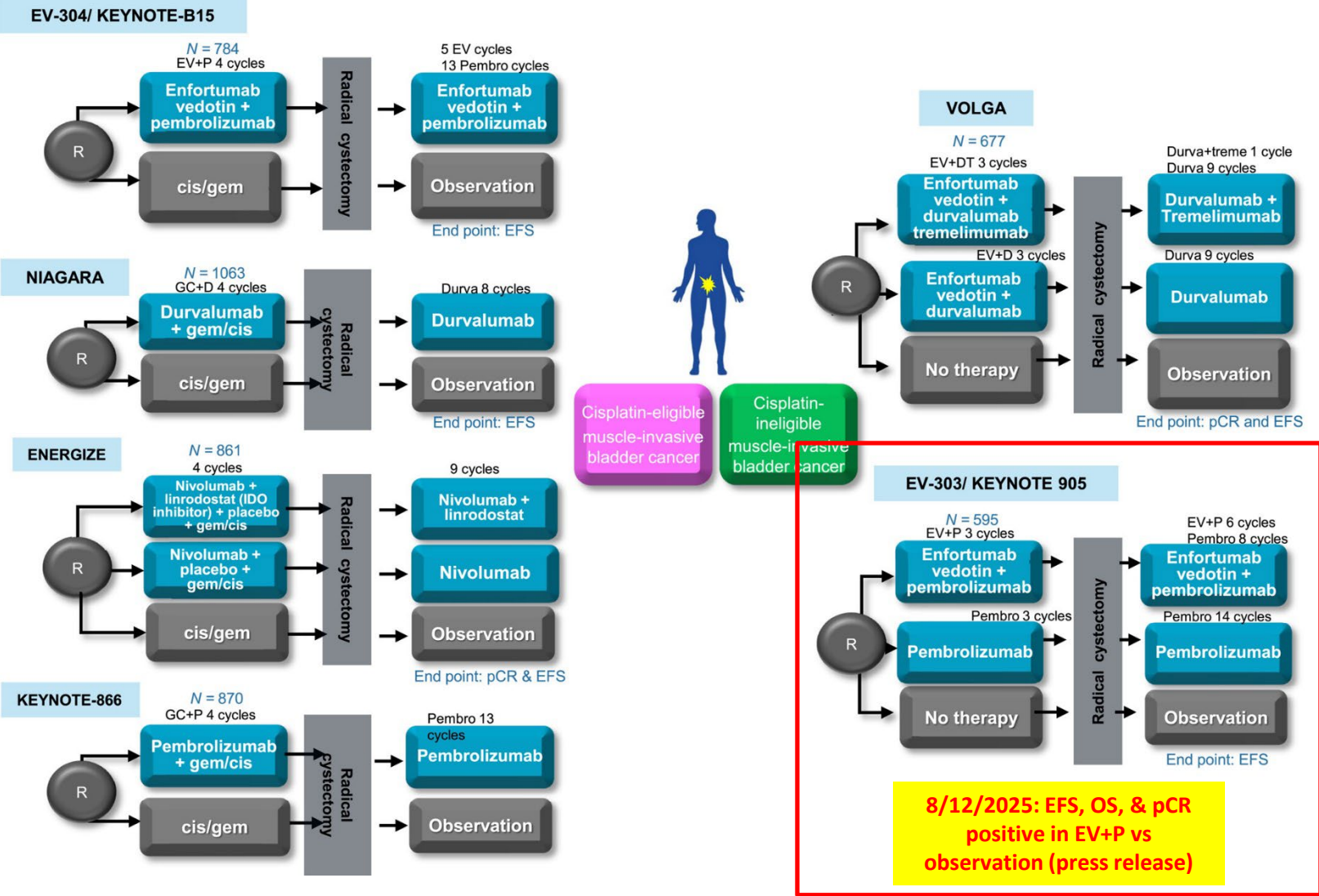
Median Follow-up: 10 months (IQR: 7.3 – 13)



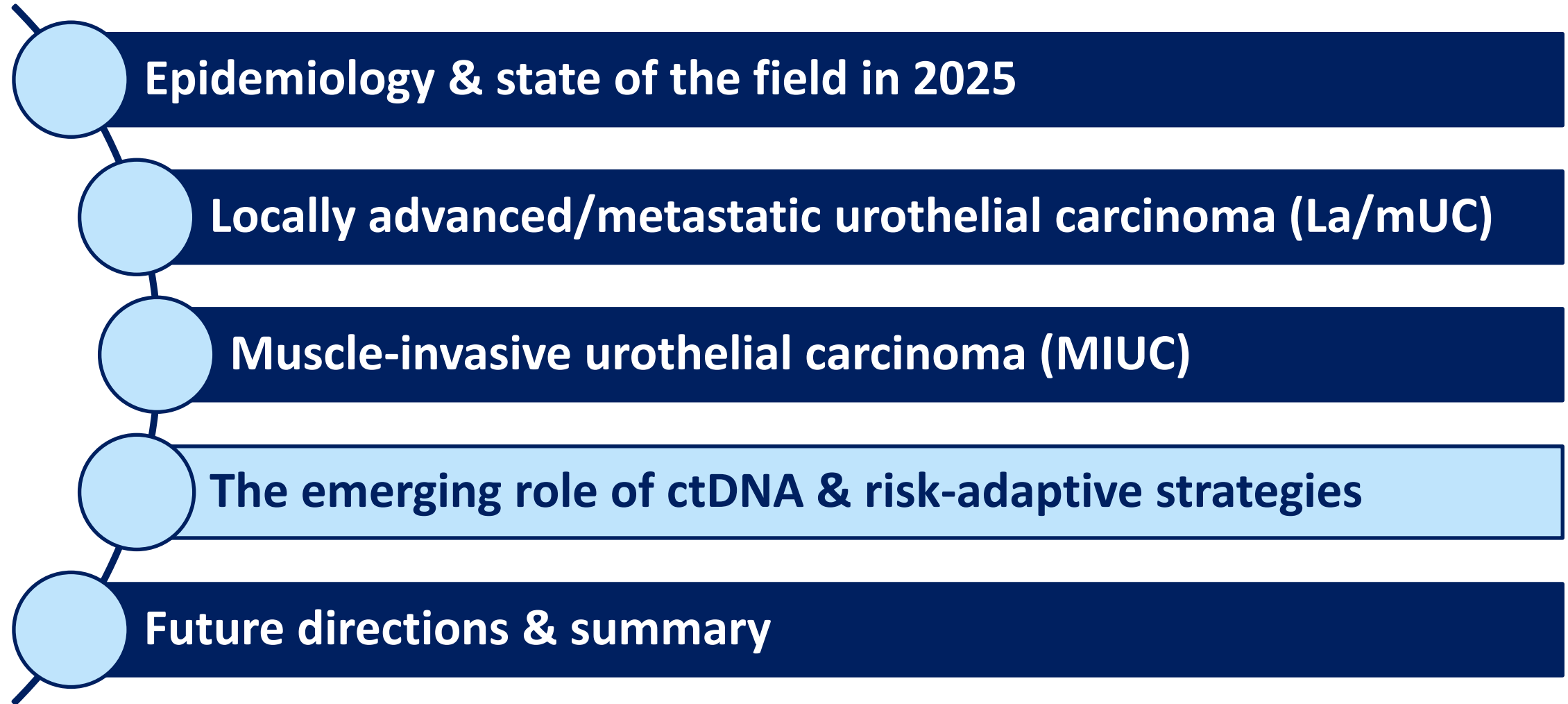
- 12m EFS:^a 71.3% (95%CI: 55.7-91.2)
- 12m MFS: 84.2% (95%CI: 72-98.5)
- 12m Bladder-intact-EFS^b in cCR patients (N=16): 100%
- 12m Bladder-intact-EFS in reTURBT patients (N=23): 74% (95%CI 54.8-99)



ONGOING PERIOPERATIVE TRIALS IN MIUC



OUTLINE

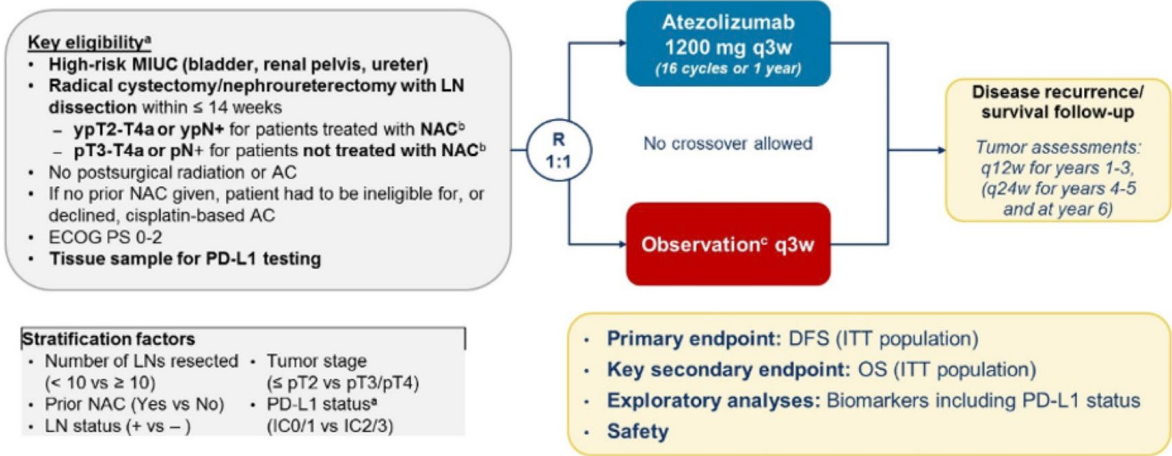


THE EMERGING ROLE OF ctDNA IN MIUC

- Tumor-informed ctDNA detects molecular residual disease (MRD) and refines relapse risk after perioperative therapy and cystectomy
- ctDNA positivity is strongly prognostic for inferior outcomes; early clearance correlates with benefit
- Trials are investigating ctDNA both as a prognostic and predictive biomarker to guide adjuvant immunotherapy and surveillance

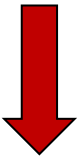
IMvigor010

IMvigor010: A phase 3, international, randomized trial (NCT02450331)

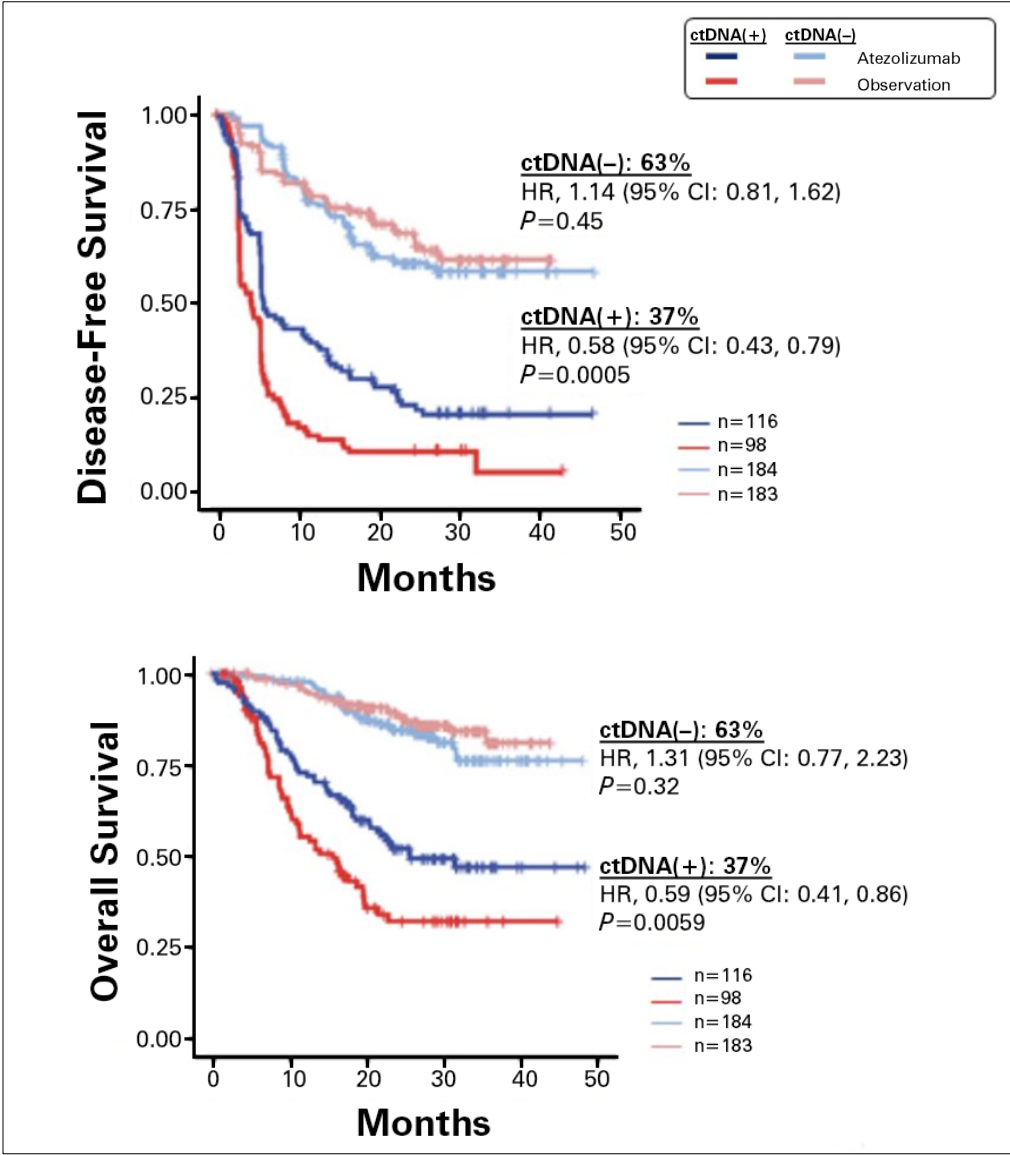


Did not meet primary DFS endpoint, but...

...benefit with atezolizumab observed in ctDNA+ pts

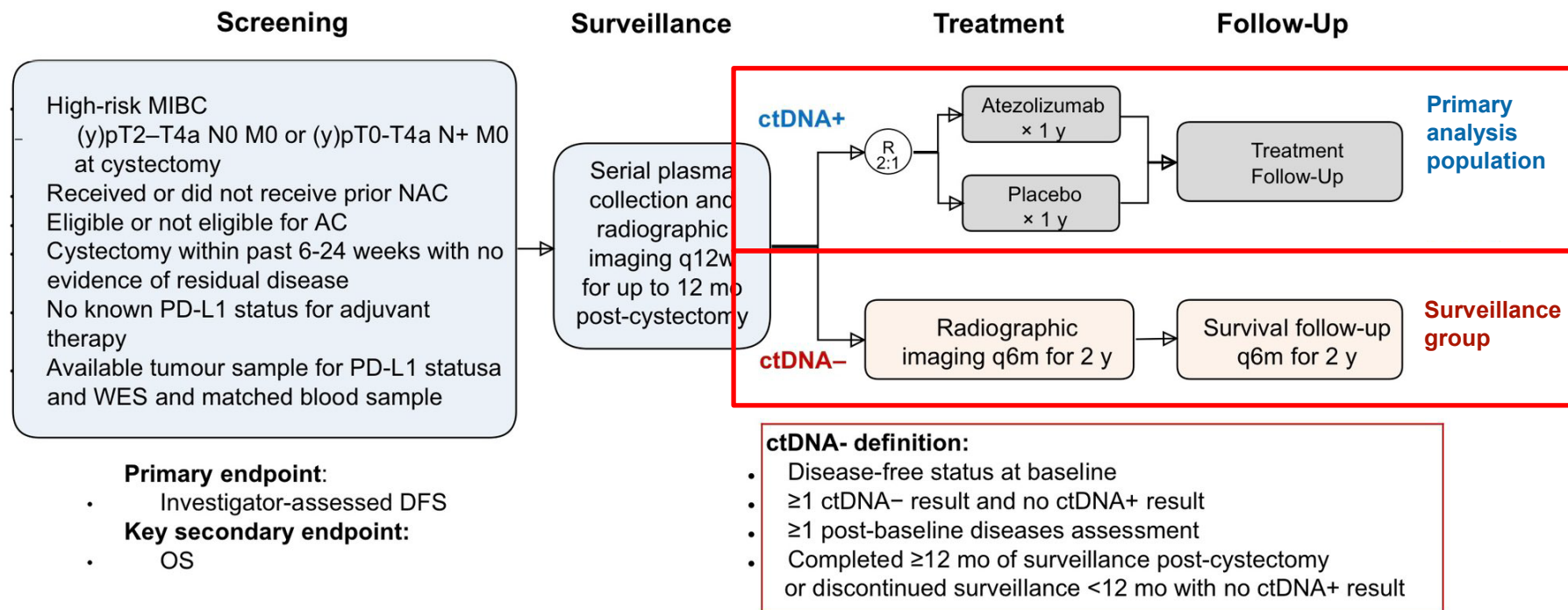


IMvigor011 (NCT04660344)



IMvigor011

IMvigor011: A phase 3, international, randomized trial (NCT04660344)



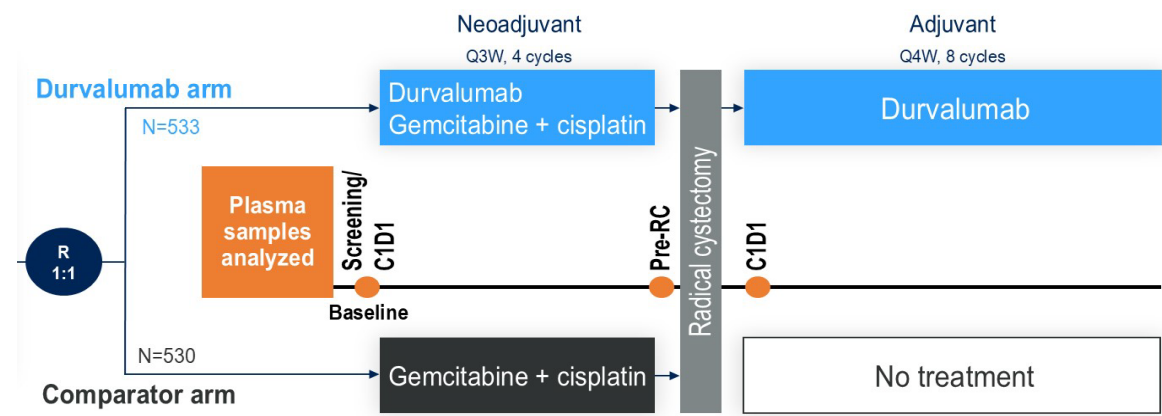
8/18/2025: DFS and OS positive in ctDNA+ pts treated with atezolizumab vs placebo (press release)

EAU 2024: analysis of ctDNA- pts on surveillance

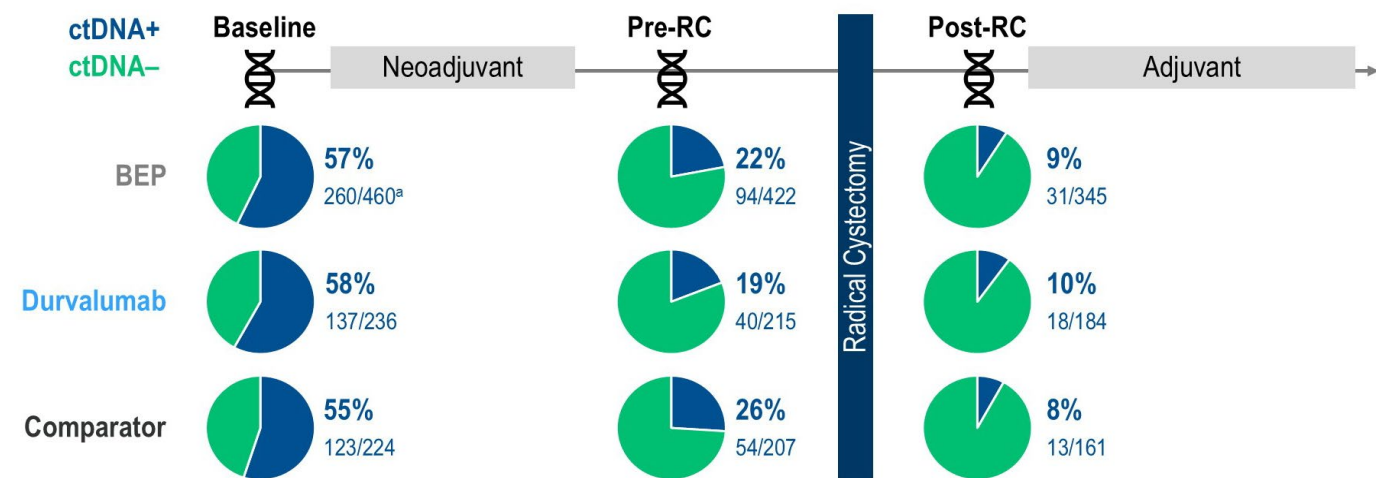
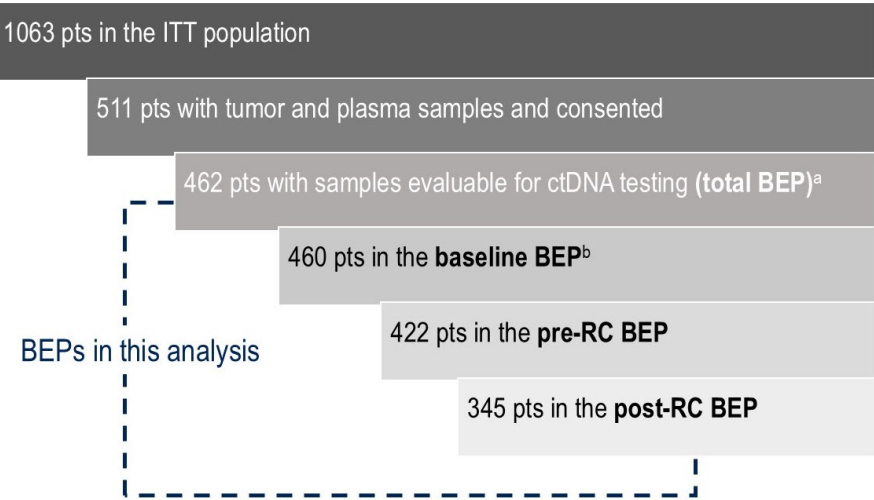
- Median f/u: 16.3 mos
- DFS at 12 mos: 92%
- DFS at 18 mos: 88%
- OS at 12 mos: 100%
- OS at 18 mos: 98%

ClinicalTrials.gov ID, NCT04660344. Stratification factors were nodal status (positive vs negative), tumour stage after cystectomy (≤(y)pT2 vs (y)pT3/(y)pT4), PD-L1 IHC status (IHC score of IC0/1 vs IC2/3 by VENTANA SP142 IHC assay) and time from cystectomy to first ctDNA+ sample (≤20 weeks vs >20 weeks). AC, adjuvant chemotherapy; IHC, immunohistochemistry; NAC, neoadjuvant chemotherapy; OS, overall survival; q6m, every 6 months; q12w, every 12 weeks; WES, whole-exome sequencing. aPD-L1 status was determined by the VENTANA SP142 IHC assay.

ctDNA IN NIAGARA

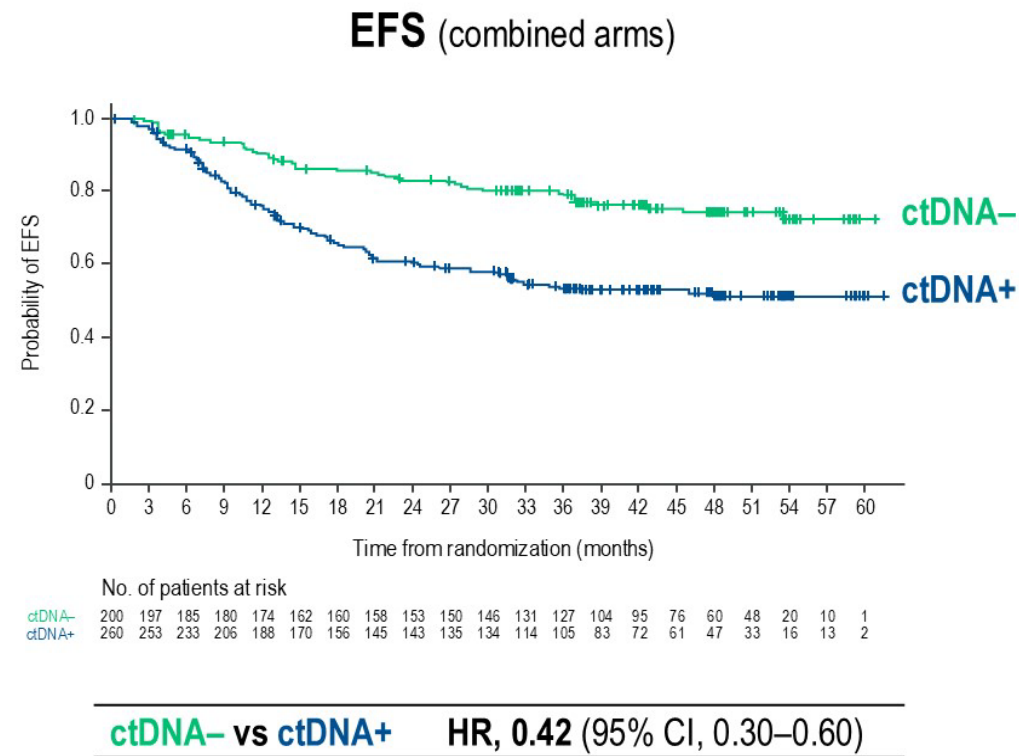


- Planned exploratory analysis of longitudinal Signatera tumor-informed ctDNA
- Baseline ctDNA+ in biomarker evaluable population (BEP): 57%
- ctDNA+ rates decreased after neoadjuvant treatment and radical cystectomy
- ctDNA status was strongly prognostic for outcomes

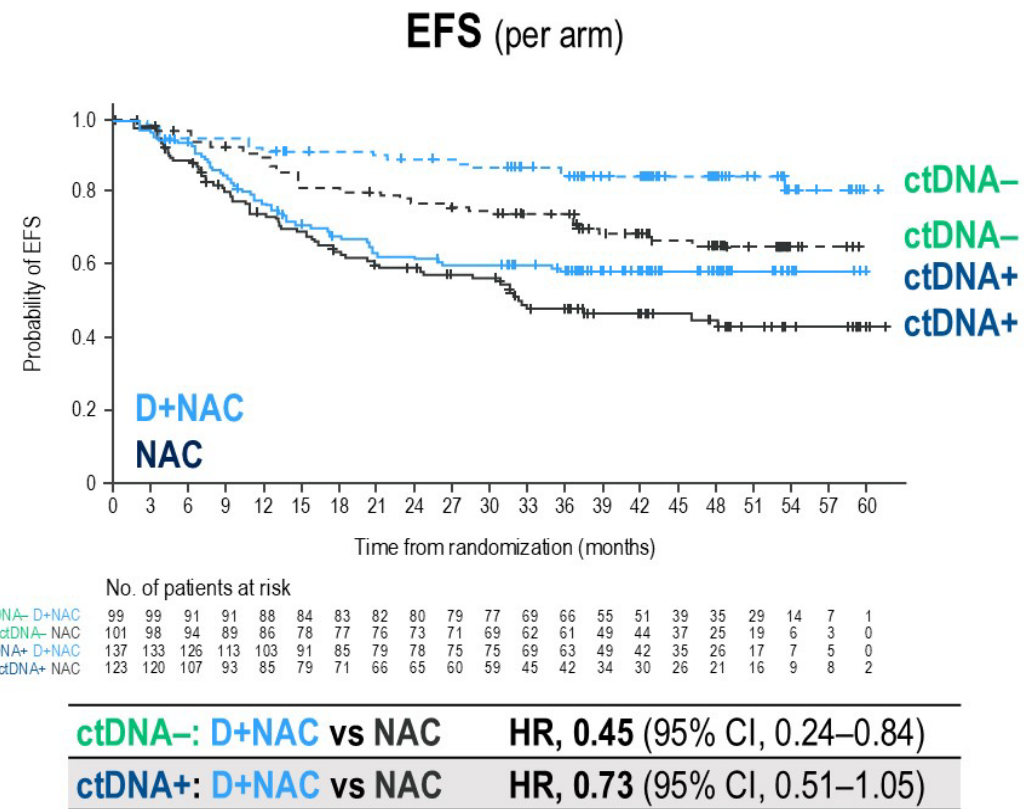


ctDNA IN NIAGARA

Baseline ctDNA was prognostic for EFS



Perioperative D+NAC provided EFS benefit regardless of baseline ctDNA status

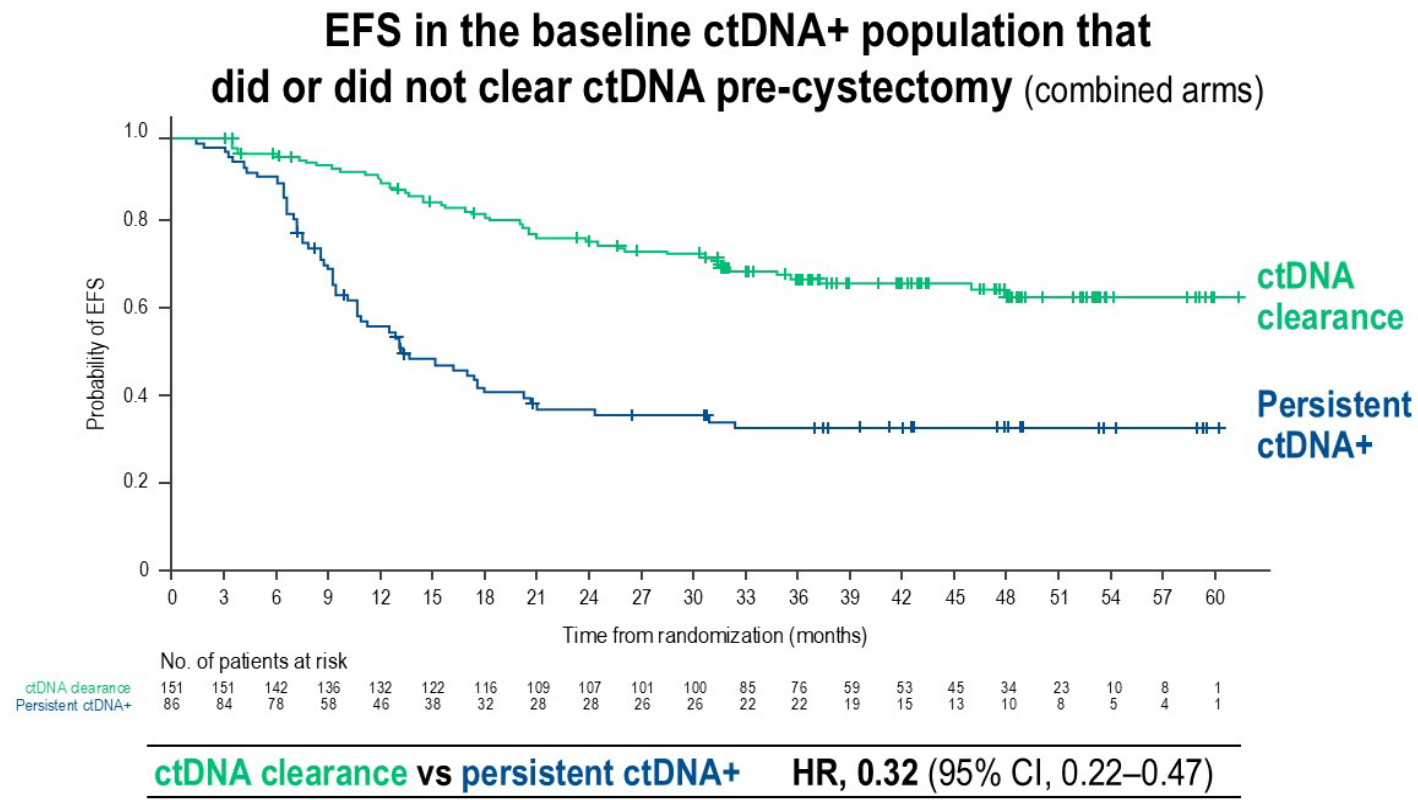
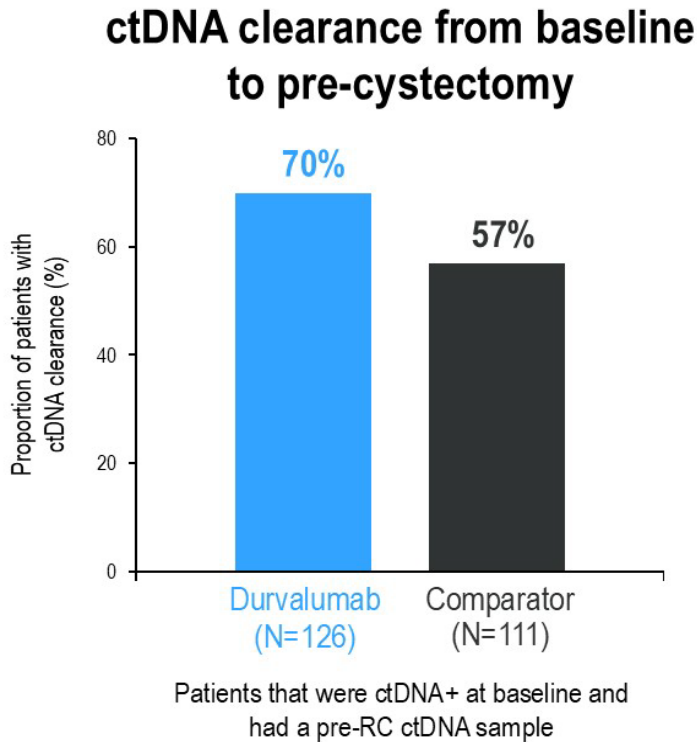


- BEP baseline ctDNA+ = 57%

Durvalumab arm = D+NAC; Comparator arm = NAC

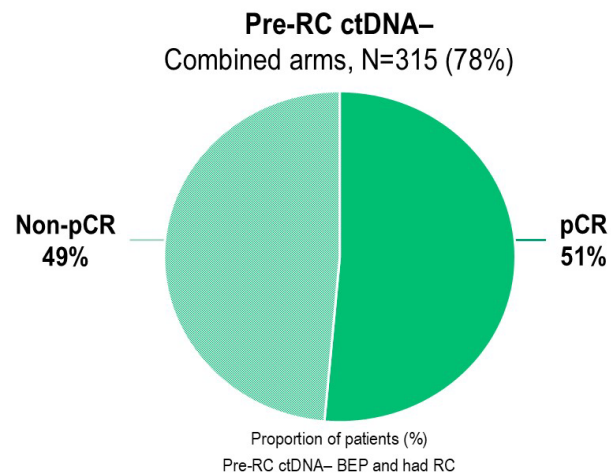
ctDNA IN NIAGARA

ctDNA clearance after neoadjuvant therapy and before cystectomy was higher in the Durvalumab arm and was associated with improved EFS

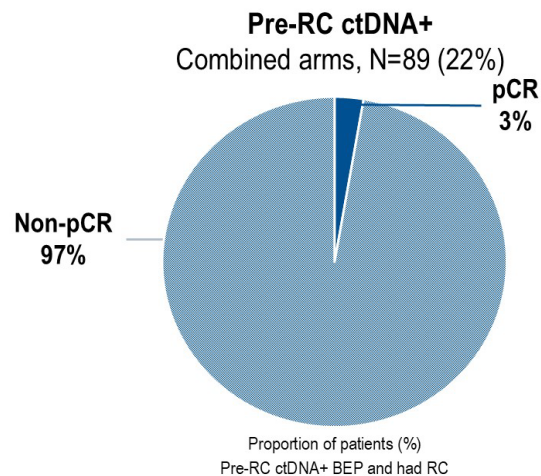


- BEP with baseline ctDNA+ and evaluable sample pre-RC = 237 patients

ctDNA IN NIAGARA

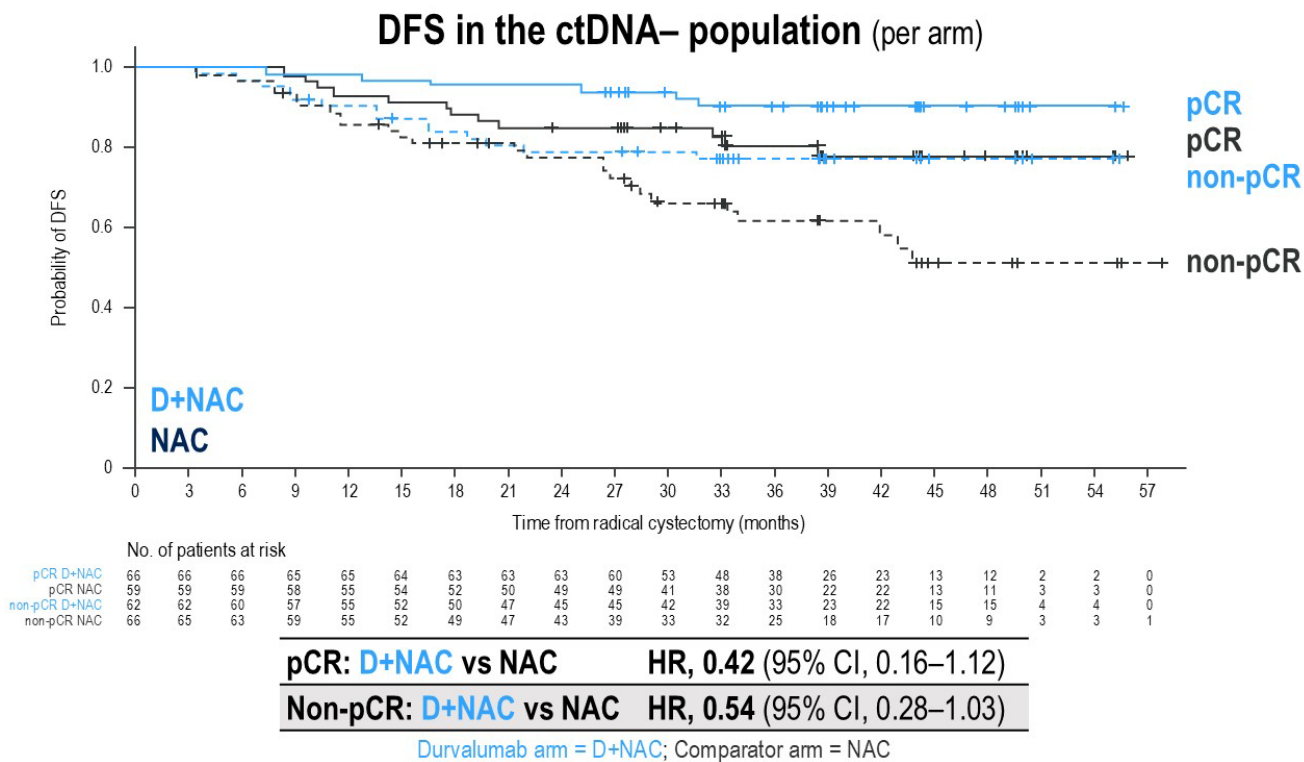


ctDNA– status was not associated with pCR



ctDNA+ status was highly correlated with non-pCR

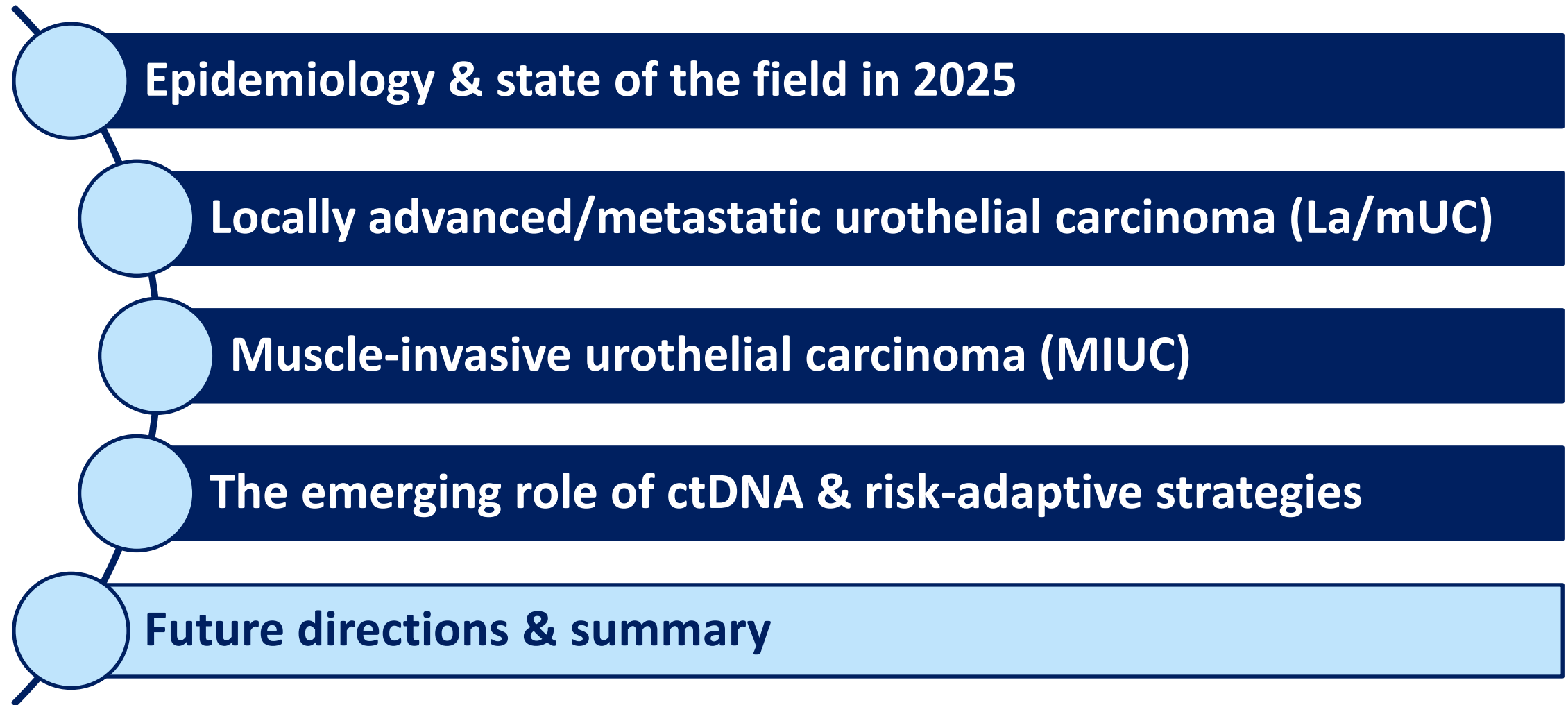
Patients with **ctDNA- post-cystectomy** derived DFS benefit from D+NAC irrespective of pathologic response status



THE EMERGING ROLE OF ctDNA IN MIUC

Domain	Emerging themes	Practice implications
Prognostic value	Pre-RC or post-RC ctDNA+ status signals high relapse risk; clearance correlates with better outcomes	Intensify adjuvant therapy & surveillance for ctDNA+; use kinetics to monitor response
Predictive value for IO	PENDING IMvigor011 prospective data to validate DFS/OS benefit in ctDNA+; persistently ctDNA– do well with surveillance	PENDING IMvigor011 data: Adopt ctDNA-guided adjuvant IO for ctDNA+; consider de-escalation (surveillance) in consistently ctDNA– with shared decision-making
Perioperative integration	NIAGARA improves EFS/OS in cis-eligible MIUC; IO improves ctDNA clearance and retains benefit across ctDNA strata	Support perioperative IO + chemo as a standard backbone in cis-eligible pts; use ctDNA to flag persistent risk
Operations & caveats	Assay timing/thresholds vary; false negatives occur; outcomes maturing; logistics evolving	Standardize testing timepoints (baseline, pre-RC, post-RC); combine with clinicopathologic risk; maintain imaging even if ctDNA–

OUTLINE

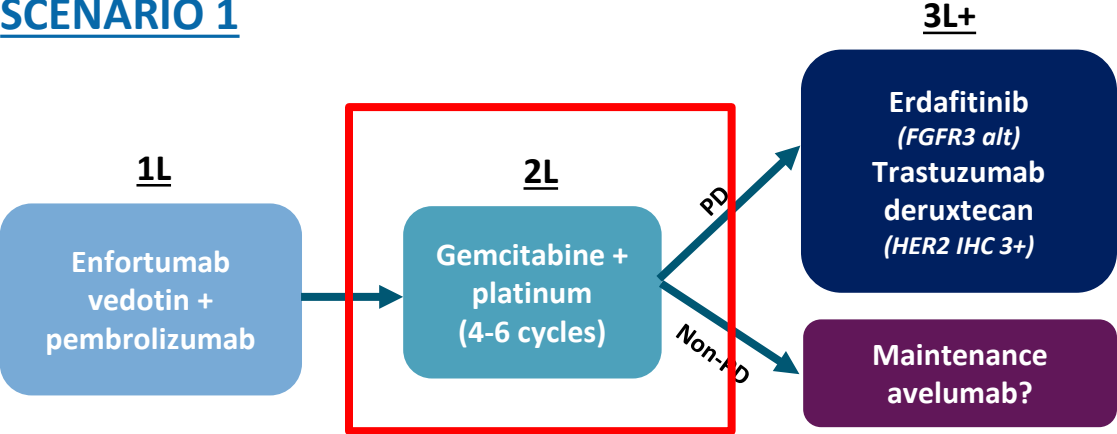


FUTURE DIRECTIONS

- Optimizing treatment sequence after EV+P and perioperative IO
- Risk-adaptive trials using clinical and molecular biomarkers to refine patient selection and guide personalized de-escalation and escalation strategies
- Defining the role of consolidative surgery or radiation in La/mUC disease states
- Improving therapeutic options and outcomes in histologic subtypes

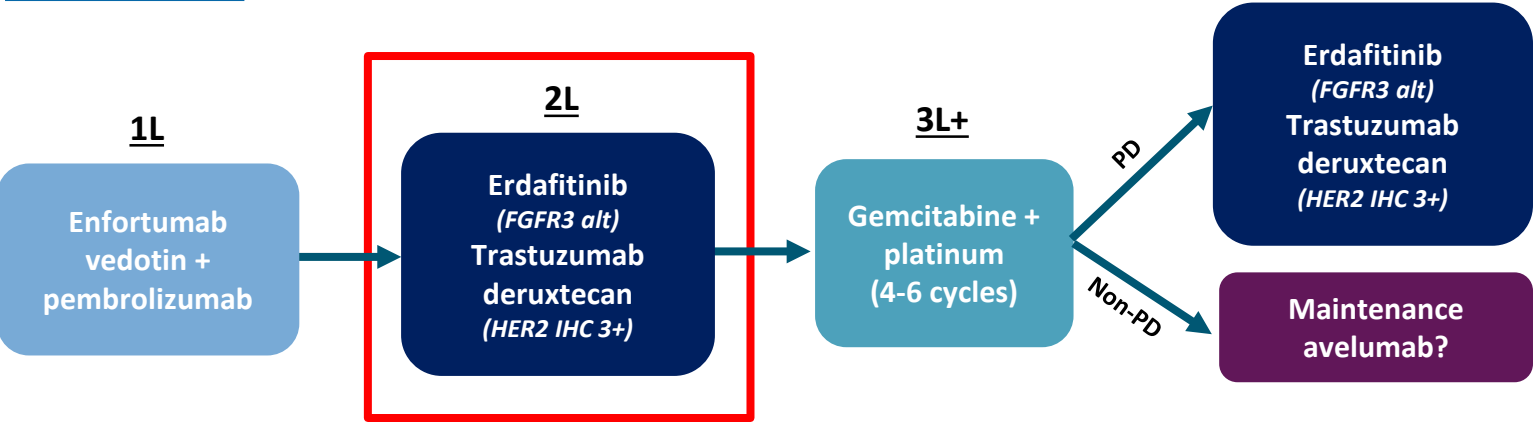
SEQUENCING AFTER EV+P

SCENARIO 1



	Gemcitabine + platinum (EV-302 control arm) ¹	Erdafitinib (THOR Cohort 1) ²	Trastuzumab deruxtecan (DESTINY-PanTumor002) ³
ORR	44%	46%	56% (IHC 3+)
DoR	7.0	5.6*	8.7
Median PFS, mos	6.3	5.6	7.4
Median OS, mos	15.9	12.1	13.4

SCENARIO 2

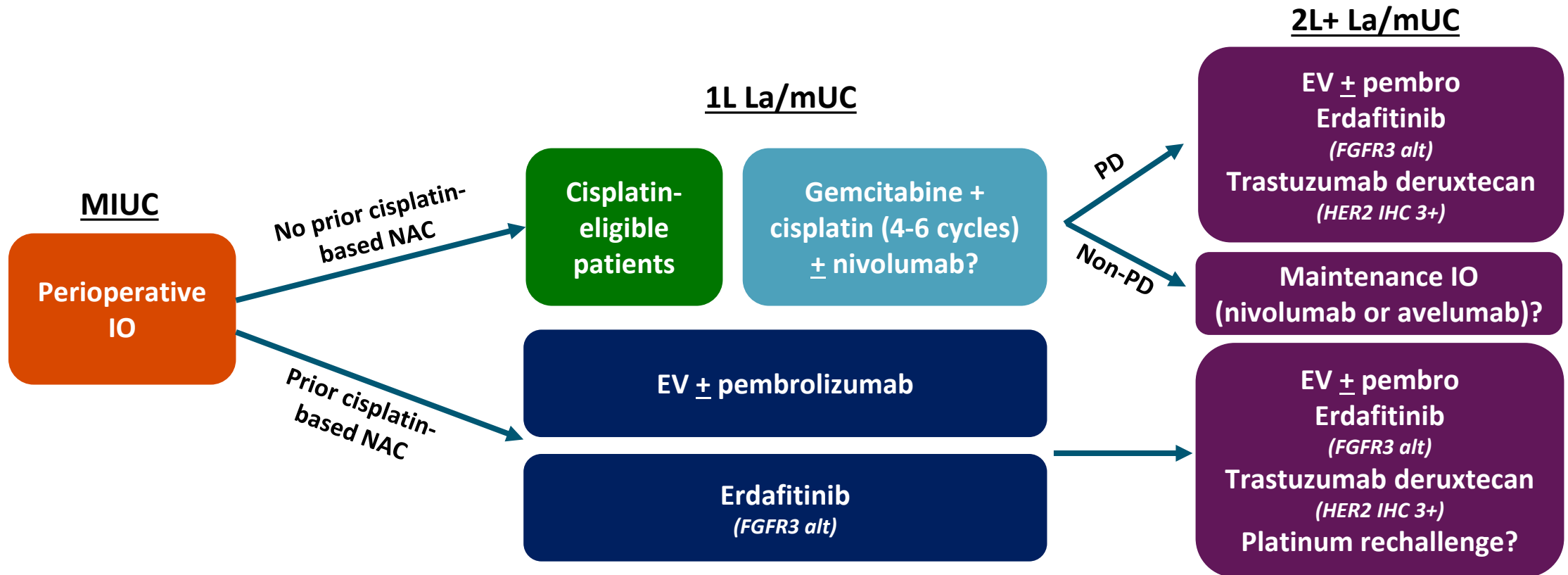


- Is there a role for IO rechallenge if PD on prior IO?
- Does time since last IO matter?
- Does intervening regimen matter?
- Toxicities with different sequences?
- Mechanisms of resistance?

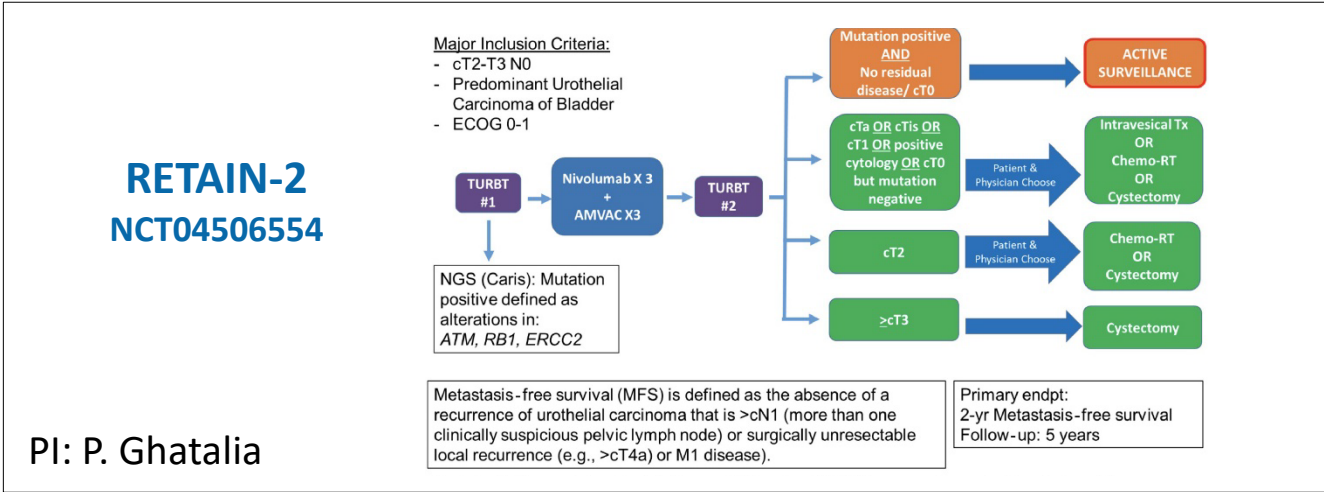
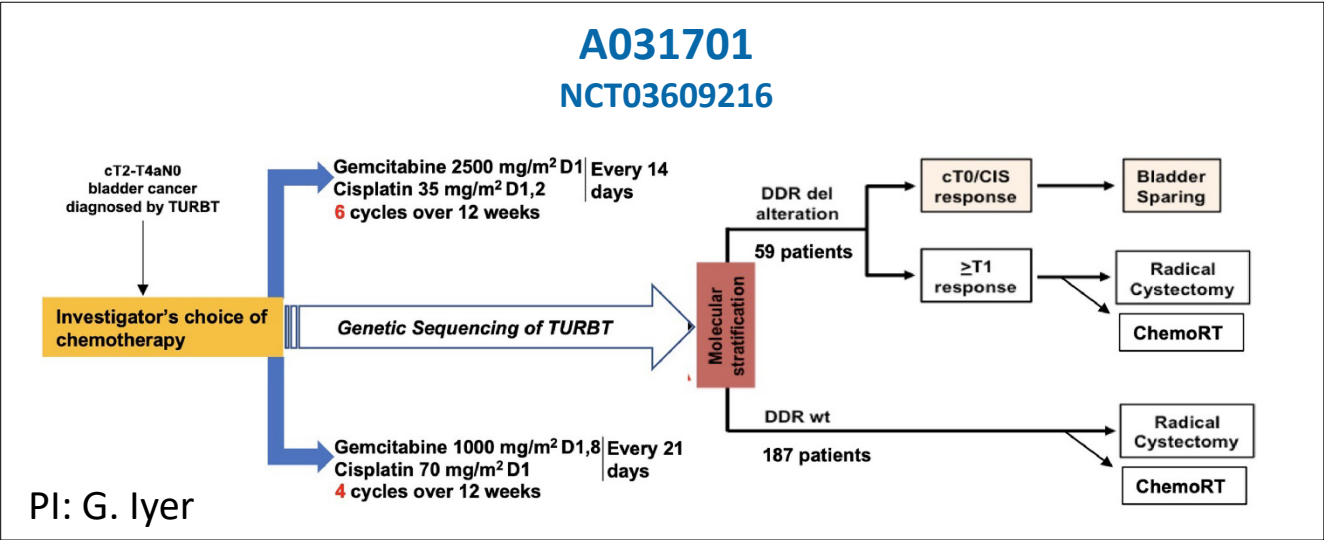
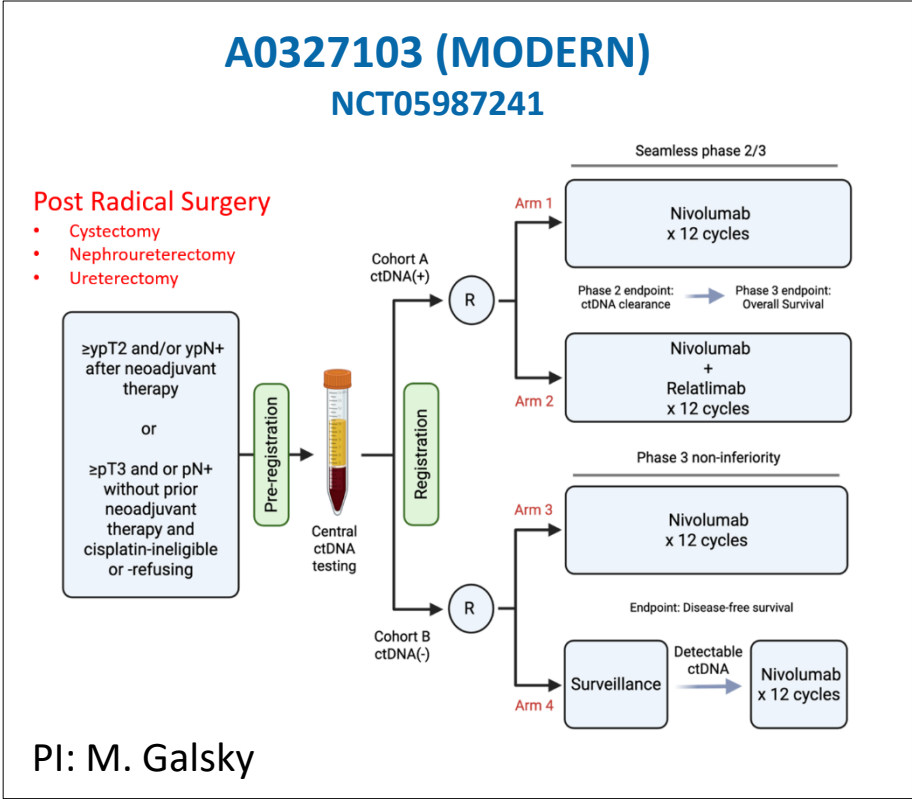
*Median DoR in Phase II BLC2001

SEQUENCING AFTER PERIOPERATIVE IO

- Neoadjuvant cisplatin-based chemotherapy within the preceding 12 months? If so, do we move straight to EV? Erdafitinib?
- Does timing of disease progression matter? (While on adjuvant IO? Within ≤ 12 or > 12 months of completion?)
- Is there a role for IO rechallenge?



SELECT RISK-ADAPTIVE PERIOPERATIVE TRIALS IN MIUC



SUMMARY: UROTHELIAL CANCERS IN 2025

- EV + pembrolizumab established as SOC in 1L La/mUC; long-term data reinforce durability
- Perioperative chemo + IO remains the SOC for MIUC, but ADC + IO regimens and ctDNA-guided strategies are poised to reshape MIUC care soon → downstream implications on La/mUC treatment
- Integration of NGS + ctDNA collection into multidisciplinary workflows is essential for personalized care
- Treatment regimens & their associated toxicities are increasingly complex & shifting to earlier treatment settings → proactive management & multidisciplinary collaboration are crucial
- Optimal therapy sequence decisions should be patient-centric with consideration of prior therapies, potential toxicities, and patient- and disease-related factors
- Clinical trials in refractory treatment settings and in histologic subtypes remain key unmet needs for improving outcomes

THANK YOU!

Our patients, families, patient advocates, & cancer advocacy organizations!

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