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Cost and Cost per Patient Achieving Key Clinical Outcomes with Perioperative Durvalumab Plus Chemotherapy Versus Enfortumab Vedotin Plus Pembrolizumab in Cisplatin-Eligible Muscle-Invasive Bladder Cancer (MIBC)

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Objective

- To estimate 2-year total costs and costs per clinical outcome achieved with perioperative durvalumab + gemcitabine and cisplatin (GC) compared to perioperative enfortumab vedotin plus intravenous pembrolizumab (EVP) in cisplatin-eligible MIBC, from a U.S. all-payer perspective using regimen-specific outcomes from separate trials.

Conclusions

- Over 2 years, estimated total costs were 31.1% ($153,341) lower with durvalumab + GC relative to EVP, primarily due to lower drug acquisition costs (52.9% lower)
- Using regimen-specific outcomes from separate trials, estimated costs per event-free patient and per surviving patient were approximately $120,000 and $154,000 lower, respectively, with durvalumab + GC.
- These findings provide an additional economic dimension supporting treatment choice alongside clinical appropriateness, safety, treatment burden, and patient preferences for patients with MIBC being considered for perioperative treatment.

Plain language summary

Why did we perform this research?
Patients with MIBC now have more treatment choices before and after surgery. We estimated the total 2-year costs of two treatment approaches and the cost associated with patients surviving (i.e., being alive) and event-free (i.e., and event is when the cancer is worsening or returning) or surviving overall at 2 years.

How did we perform this research?
We combined U.S. healthcare costs with outcomes reported in two separate clinical trials. The treatments were not compared in the same trial.

What were the findings of this research?
Over 2 years, durvalumab plus gemcitabine and cisplatin (a type of chemotherapy) had an estimated total cost approximately $153,000 lower per treated patient than enfortumab vedotin plus pembrolizumab (a targeted treatment combined with immunotherapy). Treatment acquisition costs were approximately $166,000 lower and were the main reason for the difference. Without adjusting for differences between trials, its estimated costs per patient event-free and per surviving patient overall at 2 years were also lower.

What are the implications of this research?
This study provides an estimate of total treatment costs with two treatment choices that are used before and after surgery for appropriate patients with MIBC. Total treatment costs are one consideration alongside the expected benefit of a treatment, the side effects, treatment burden, and patient preferences when making treatment choices. Because the results came from separate trials, this study cannot determine which treatment is more effective.

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Background

Evolving care and evidence gap

- MIBC is generally considered to account for approximately 20-25% of bladder cancers and is associated with substantial risks of recurrence, progression, and death.[1]
- Approximately half of patients experience recurrence/progression within 5 years and 5-year OS of approximately 40–70%.[2]
- Historically, for eligible patients, neoadjuvant cisplatin-based chemotherapy followed by RC has been a standard approach.[2]
- The treatment landscape has evolved to include perioperative regimens given before and after surgery, such as durvalumab + GC and EVP. Both regimens are FDA approved for MIBC.[3-6]
- These advances make both clinical outcomes and the associated economic burden relevant to treatment decisions. Total costs and costs per clinical outcome for these regimens remain insufficiently characterized in the US.

Key trial findings and trial differences

- **Perioperative Durvalumab + GC (NIAGARA):**

Durvalumab + GC, 4 cycles → **Radical Cystectomy** → Durvalumab, 8 cycles

- 24-month EFS was 67.8% vs 59.8% (HR 0.68), and OS was 82.2% vs 75.2% (HR 0.75), versus neoadjuvant GC alone.[3]
- **Perioperative EVP (KEYNOTE-B15/EV-304):**

EV + pembrolizumab, 4 cycles → **Radical Cystectomy** → EV, 5 cycles; pembrolizumab, 13 cycles

- 24-month EFS was 79.4% vs 66.2% (HR 0.53), and OS was 86.9% vs 81.3% (HR 0.65), versus neoadjuvant GC alone.[4]
- The trial populations differed: NIAGARA had higher proportions or patients with T2N0 disease, creatinine clearance <60 mL/min, and Asian patients, which may affect outcomes and resource use.[3,4]
- Trial designs differed in treatment exposure: GC was neoadjuvant-only in NIAGARA, whereas EV was administered both neoadjuvantly and adjuvantly in KEYNOTE-B15/EV-304.

Methods

- **Model structure:** A decision-tree model (Figure 1) estimated cumulative costs and clinical outcomes over a 2-year horizon (Table 1).
- **Clinical inputs:** Regimen-specific EFS and OS came from NIAGARA and KEYNOTE-B15/EV-304. Results were used descriptively without adjustment; no formal indirect treatment comparison or network meta-analysis was conducted.[3,4]
- Observed Kaplan-Meier estimates through 24 months were used without survival extrapolation.[3,4]
- Restricted mean EFS and OS months (not medians) represent the area under each survival curve from baseline through 24 months.
- Event-free and post-event care costs accrue monthly, weighted by the proportion in each state in that month. Post-event occupancy is OS minus EFS. Terminal care covers the final 30 days of life and is applied once per death within the horizon.[7,8]
- **Economic inputs:** Costs included treatment acquisition and administration*, radical cystectomy and readmissions within 90 days, adverse-event management, disease management, and patient travel. Costs are in 2026 USD and discounted at 3% annually.[7-12]
- Drug acquisition used RED BOOK wholesale acquisition costs across payer types. Trial-informed treatment exposure informed treatment costs. Disease-management costs included event-free care, post-event care, and one-time terminal care.[7,8]
- **Outcome measures at month 24:** Cost per event-free patient = mean cost per treated patient ÷ EFS probability. Cost per surviving patient = mean cost per treated patient ÷ OS probability. The divisor represents patients achieving the outcome, not the number of events.

*This analysis assumes intravenous (IV) pembrolizumab administration as part of the EVP regimen.

Figure 1. Model structure

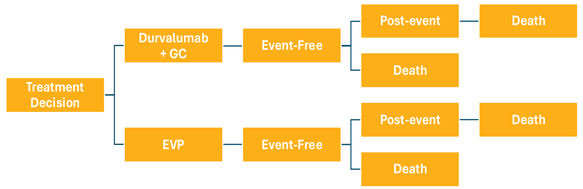


Table 1. Model framework

Element	Analysis
Population	Cisplatin-eligible patients with MIBC
Interventions	Perioperative durvalumab + neoadjuvant gemcitabine/cisplatin Perioperative enfortumab vedotin + intravenous pembrolizumab
Perspective and horizons	U.S. all-payer, 2-year analysis
Cost basis	2026 USD, 3% annual discounting, WAC drug pricing[5]
Clinical evidence	Trial-reported EFS/OS through 24 months, without extrapolation[1,2]
Outcomes	Total cost, cost difference, mean EFS/OS months (0–24 months), cost per event-free or surviving patient

EFS, event-free survival; EVP, enfortumab vedotin + pembrolizumab; GC, gemcitabine/cisplatin; MIBC, muscle-invasive bladder cancer; OS, overall survival; WAC, wholesale acquisition cost.

Results and interpretation

- **Total costs:** At 2 years, total cost per patient was $339,366 for durvalumab + GC and $492,707 for EVP: $153,341 (31.1%) lower with durvalumab + GC (Figure 2).
- Treatment acquisition costs were $147,470 with durvalumab + GC and $313,428 with EVP, a difference of $165,958, or 52.9% lower with durvalumab + GC. This was the primary driver of the overall cost difference.
- **Outcomes:** At 2 years, trial-reported EFS was 67.8% for durvalumab + GC and 79.4% for EVP; OS was 82.2% and 86.9%, respectively. Restricted mean EFS through 24 months was 18.89 and 21.03 months; restricted mean OS was 21.64 and 22.28 months.[3,4]
- Cost per event-free patient at month 24 was $500,540 with durvalumab + GC and $620,538 with EVP (difference: −$119,998). Cost per surviving patient was $412,854 and $566,982, respectively (difference: −$154,128) (Figure 3).

Figure 2. Cumulative 2-year costs per patient

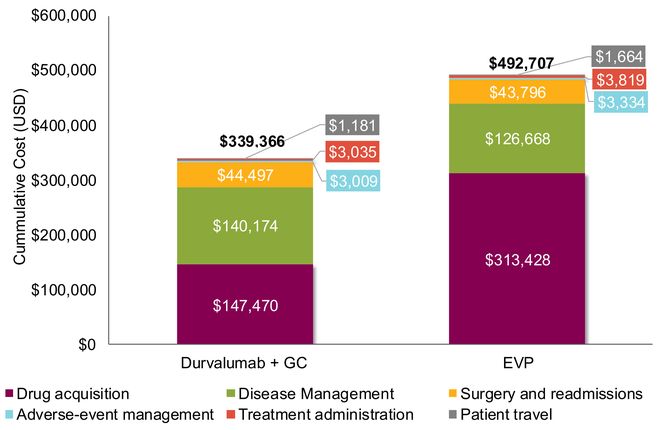
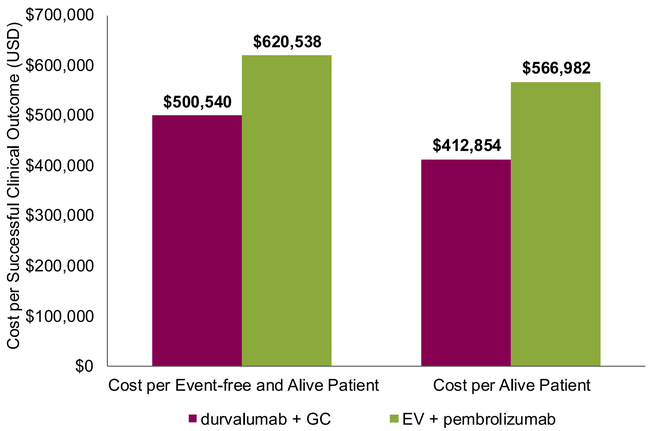


Figure 3. Cost per clinical outcome at 2 years



Key Findings

Descriptive 2-year estimates

Durvalumab + GC had lower estimated total 2-year costs by a difference of **$153K (31.1%),** driven by lower treatment acquisition costs (**difference of $166K or 52.9% lower)** relative to EVP.

Using unadjusted outcomes from separate trials, estimated cost per event-free patient and cost per surviving patient were approximately $120,000 and $154,000 lower, respectively, with durvalumab + GC relative to EVP.

Limitations

Separate trials, no adjustment

Separate trial populations were used without adjustment. Differences in baseline characteristics, study design, and follow-up can influence reported EFS and OS. No formal indirect treatment comparison or network meta-analysis was conducted. Therefore, cross-trial differences in EFS and OS should not be interpreted as comparative treatment effects.[3,4]

Costs reflect WAC pricing and model assumptions regarding treatment exposure and resource use; negotiated discounts and rebates were not considered.[8]

The 2-year horizon excludes longer-term costs and outcomes. Average costs per outcome do not establish relative efficacy or incremental cost-effectiveness.

Disclosures

SW, JS, and MM are employees of FTI Consulting Inc. and received consulting fees from AstraZeneca for this work. SS, LB, and EG are employees of AstraZeneca. BG is affiliated with Sarah Cannon Research Institute.

References

1. Kulkarni GS, et al. Can Urol Assoc J. 2025;19:E1–E16
2. Holzbeierlein J, et al. J Urol. 2024;212:3–10.
3. Powles T, et al. N Engl J Med. 2024;391:1773–1786.
4. Galsky MD, et al. N Engl J Med. 2026;395:338–348.
5. FDA. Durvalumab approval for MIBC. March 28, 2025.
6. FDA. Pembrolizumab + enfortumab vedotin approval for MIBC. July 10, 2026.
7. Lai Y, et al. Value Health. 2025;28(6):S120. Abstract EE315.
8. Merative. Micromedex RED BOOK. 2026.
9. CMS. Physician Fee Schedule. 2026.
10. Leow JJ, et al. Eur Urol. 2018.
11. Patel A, et al. PLoS One. 2025;20:e0332703.
12. Williams SB, et al. JAMA Surg. 2019;154:e191629.