

HEALTHCARE COSTS RELATED TO CHEMOTHERAPY-INDUCED NAUSEA AND VOMITING: A RETROSPECTIVE ANALYSIS IN A U.S. COMMERCIALY INSURED POPULATION

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Background

- Chemotherapy-induced nausea and vomiting (CINV) is a major adverse effect of chemotherapy that has implications for the patient, the treating physician, and the payer.
- Chemotherapeutic agents are categorized into 4 emetic risk groups based on the guidelines of the National Comprehensive Cancer Network: high, moderate, low, and minimal.
- Previous studies have shown that in a hospital setting, CINV and its treatment is both common and costly.

Study Objectives

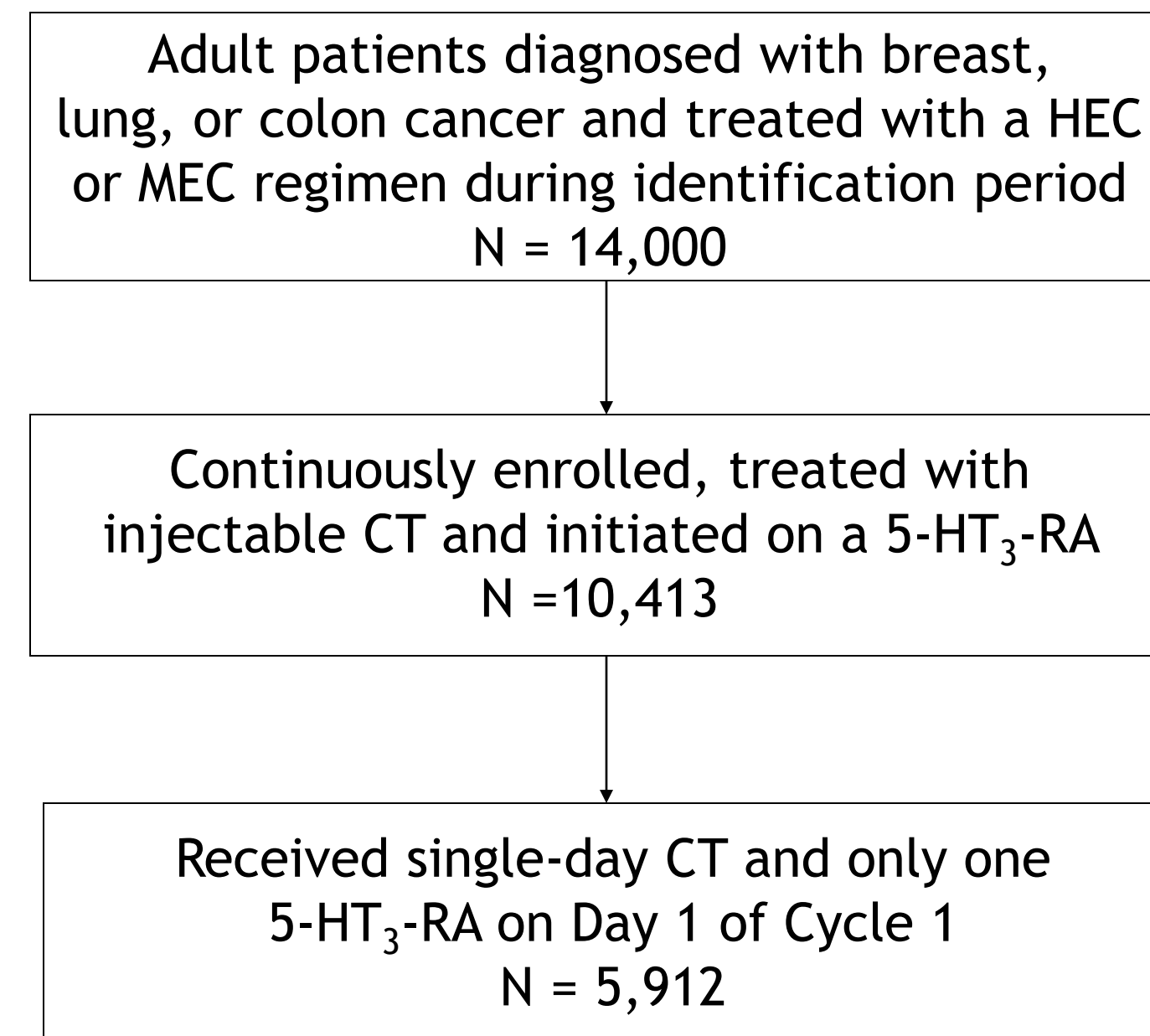
- To examine CINV-related healthcare costs incurred by patients receiving highly or moderately emetogenic chemotherapy (HEC or MEC) and treated with a 5-hydroxytryptamine-3 serotonin receptor antagonist (5-HT₃-RA).
- To compare the rate of CINV between users of palonosetron and other 5-HT₃-RAs (granisetron, ondansetron, and dolasetron).

Methods

- Retrospective cohort analysis using HIPAA-compliant claims from the i3/Ingenix LabRx database.
- Study included continuously enrolled adult patients diagnosed with breast, lung, or colon cancer who were newly treated with single-day HEC or MEC and received a prophylactic 5-HT₃-RA between 4/1/2008 and 3/31/2009.
- Index date was Day 1 of chemotherapy, and patients were followed for up to 6 cycles of chemotherapy.
- Exclusion criteria included any chemotherapy in the 6 months before the index date or more than one 5-HT₃-RA on the index date.
- CINV was defined as a rescue antiemetic infusion or a medical claim with a primary diagnosis of nausea and vomiting (ICD-9-CM 787.0x) or volume depletion (276.5x) from the index date to the end of follow-up.
- Outcomes of interest included the rate of CINV and CINV-related healthcare charges that occurred after Day 1 of chemotherapy to the end of the follow-up period.

Results

Patient Identification and Stratification



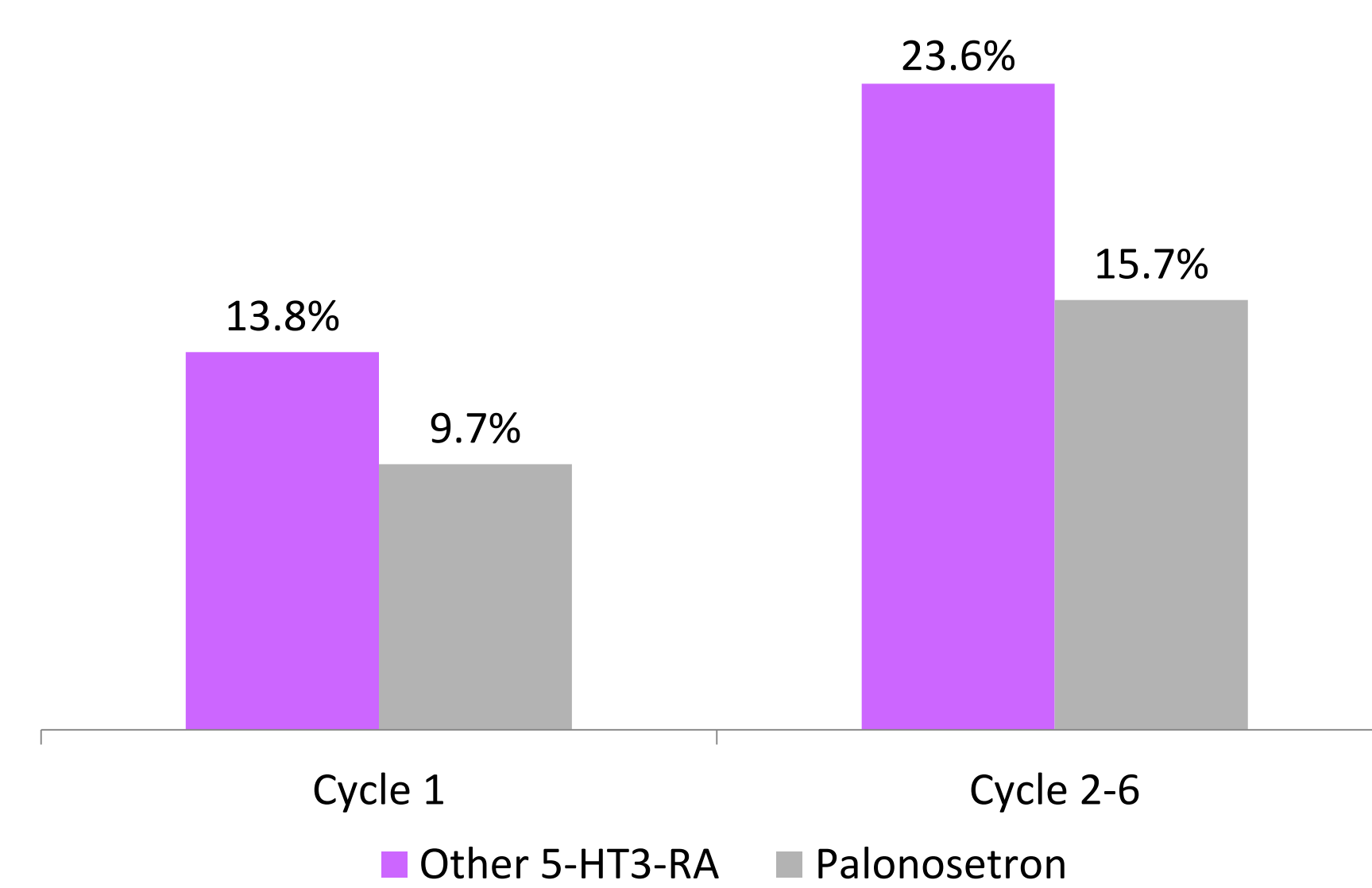
- A total of 5,912 patients were identified, 25.7% (N = 1,518) treated with HEC and 74.3% (N = 4,394) treated with MEC.
- Of the 5,912 patients identified, 71.8% (n = 4,245) received palonosetron and 28.1% (n = 1,667) received another 5-HT₃-RA.
- A total of 21,821 cycles (5,912 Cycle 1 and 15,909 Cycles 2-6) were identified.

Demographic Characteristics

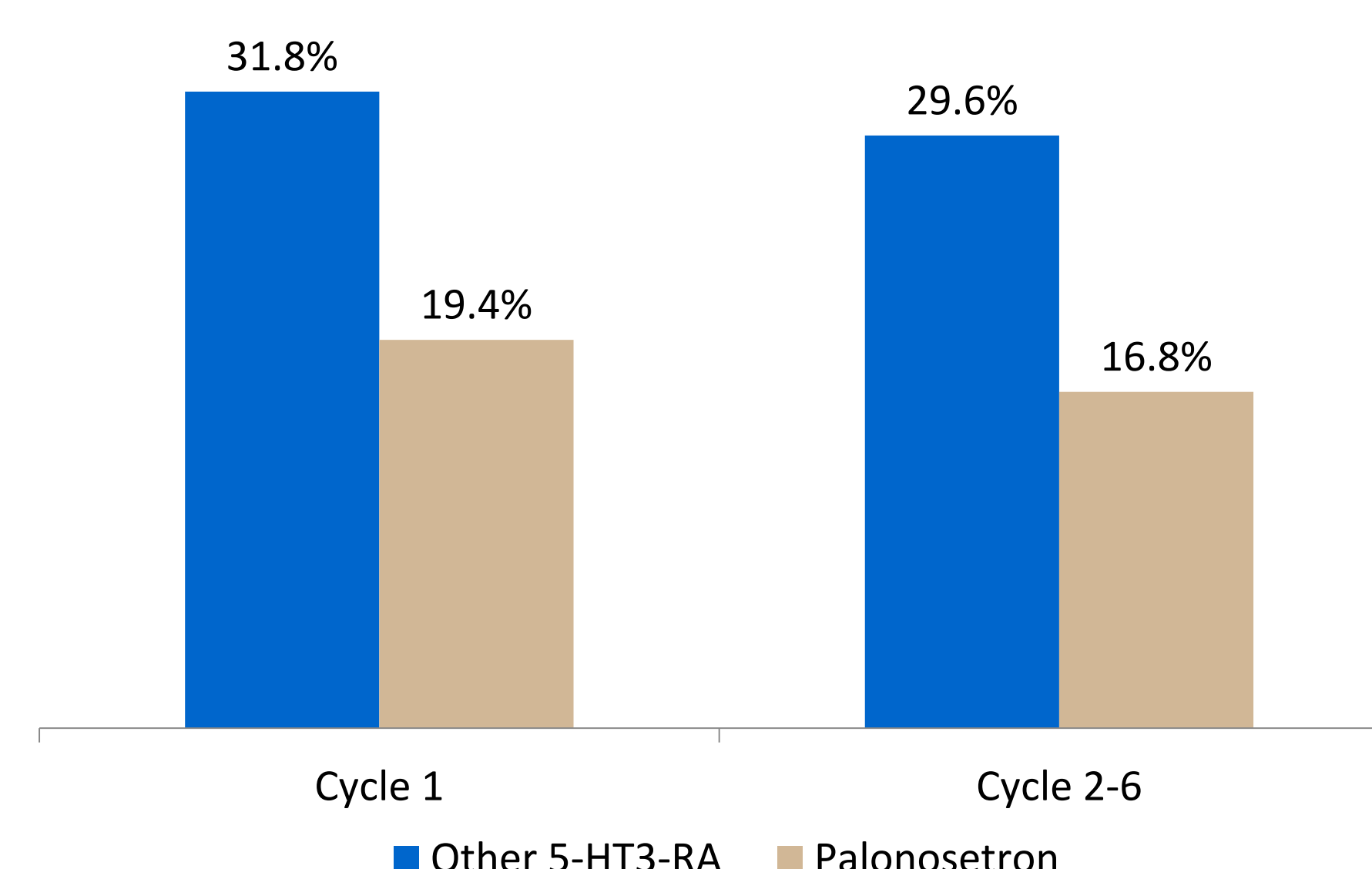
	HEC N = 1,518	MEC N = 4,394	All N = 5,912	P Value
Age, mean (SD), y	52.1 (9.8)	57.5 (10.1)	56.1 (10.3)	<.001
Female, no. (%)	1466 (96.6)	3093 (70.4)	4559 (77.1)	<.007

- Patients on MEC were significantly older than patients on HEC (57.5 vs. 52.1 years, *P*<.001).
- There was a significantly higher proportion of female patients (96.6% vs. 70.4%, *P*<.007) in the HEC group compared with the MEC group.

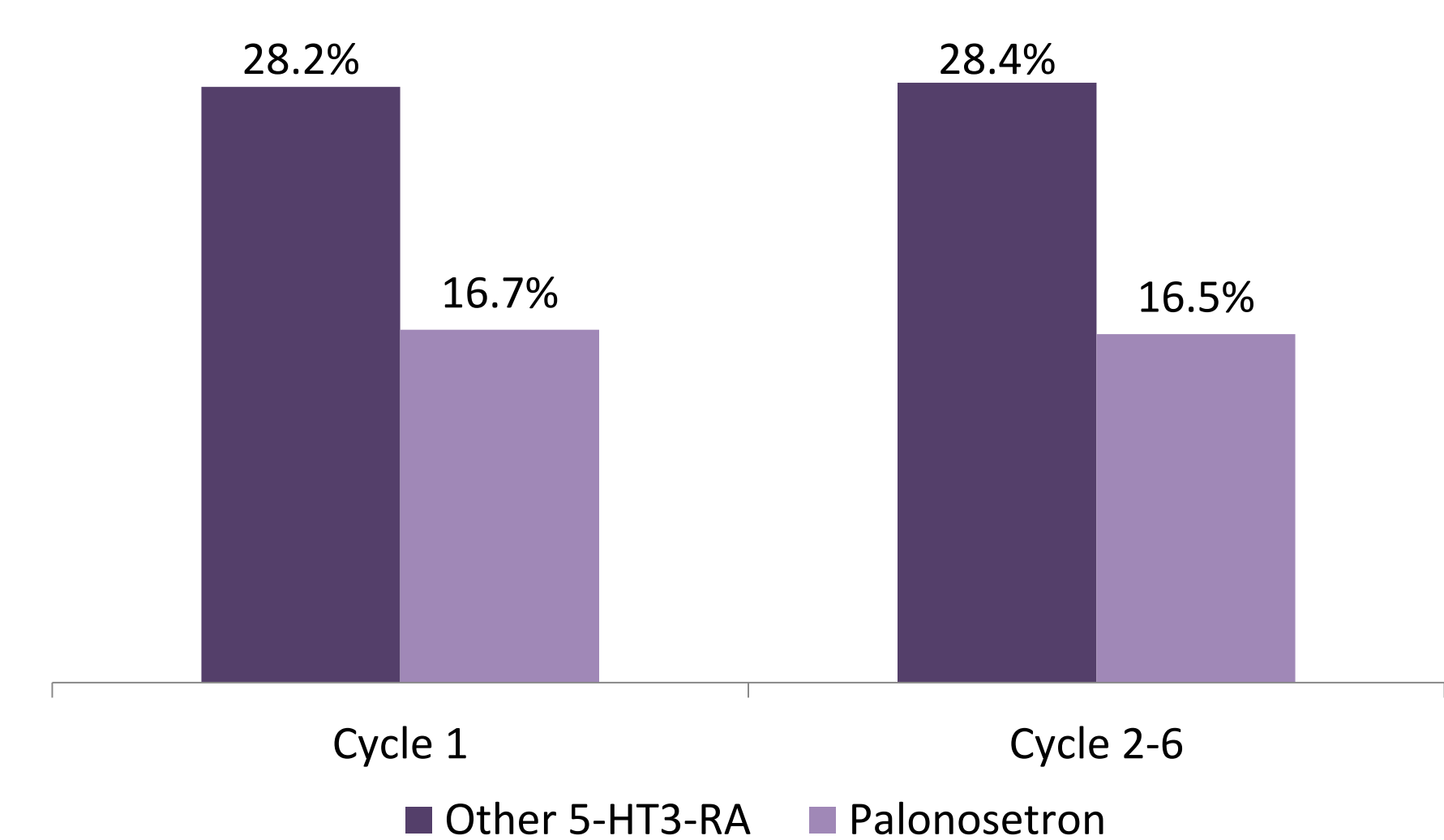
Rate of CINV Per Cycle in Patients on HEC



Rate of CINV Per Cycle in Patients on MEC

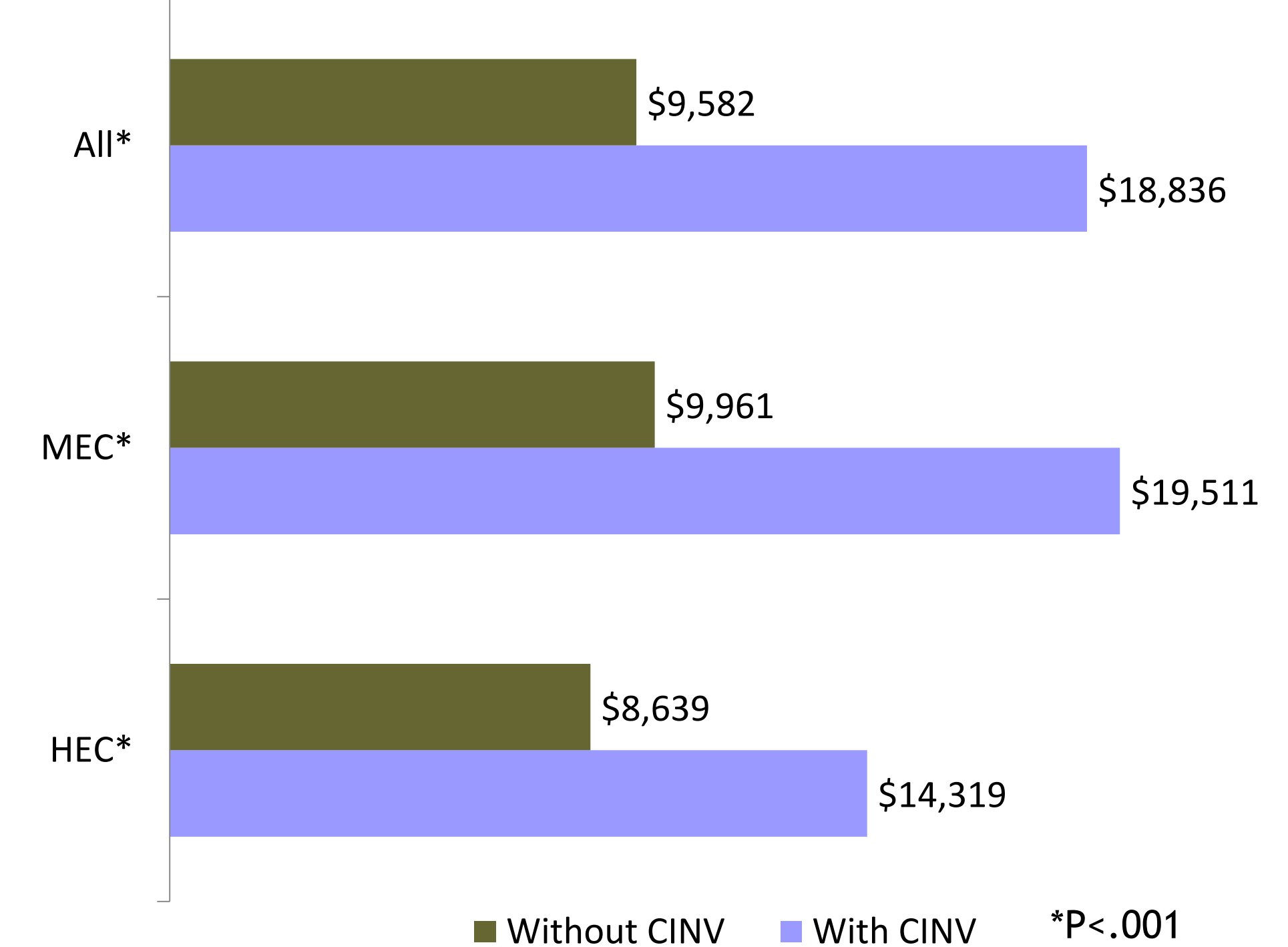


Overall Rate of CINV Per Cycle



- Overall rate of CINV (N = 5,912) was 19.9% for Cycle 1 and 19.7% for Cycles 2-6.

Total Healthcare Costs for Patients With vs. Without CINV*



*Calculated using data from Cycle 1.

- Mean total healthcare costs in the first cycle for patients with CINV were \$18,836 (SD= \$27,069) compared with \$9,582 (SD=\$22,936) for patients without CINV (*P*<.001).
- In Cycle 1, mean CINV-related costs were \$2,047 for patients on HEC, \$2,060 for patients on MEC, and \$2,058 across all patients.
- For patients with CINV in Cycles 1-6, mean total healthcare costs were \$1,521 per cycle for patients on HEC, \$1,626 per cycle for patients on MEC, and \$1,604 per cycle across all patients.

Conclusions

- CINV affected nearly a quarter of patients undergoing chemotherapy.
- The results of this study show that the cost of CINV was substantial: nearly double the overall healthcare costs for patients without CINV and by nearly \$2000 in CINV-related charges incurred in the first cycle.
- The rate of CINV was statistically lower for patients receiving palonosetron compared with patients receiving another 5-HT₃-RA (16.7% vs. 28.2%, respectively; *P*<.001).
- Limitations include a focus on commercially insured patients, which might systematically exclude older patients insured by Medicare, a lack of detailed clinical data that affect the risk of CINV, and an inability to capture indirect costs (e.g., costs due to absenteeism because of CINV-related events).

This research was supported by Eisai Inc.

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