

Patterns of postoperative nausea and vomiting prophylaxis in patients undergoing cesarean delivery: a multicenter retrospective cohort study

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Background

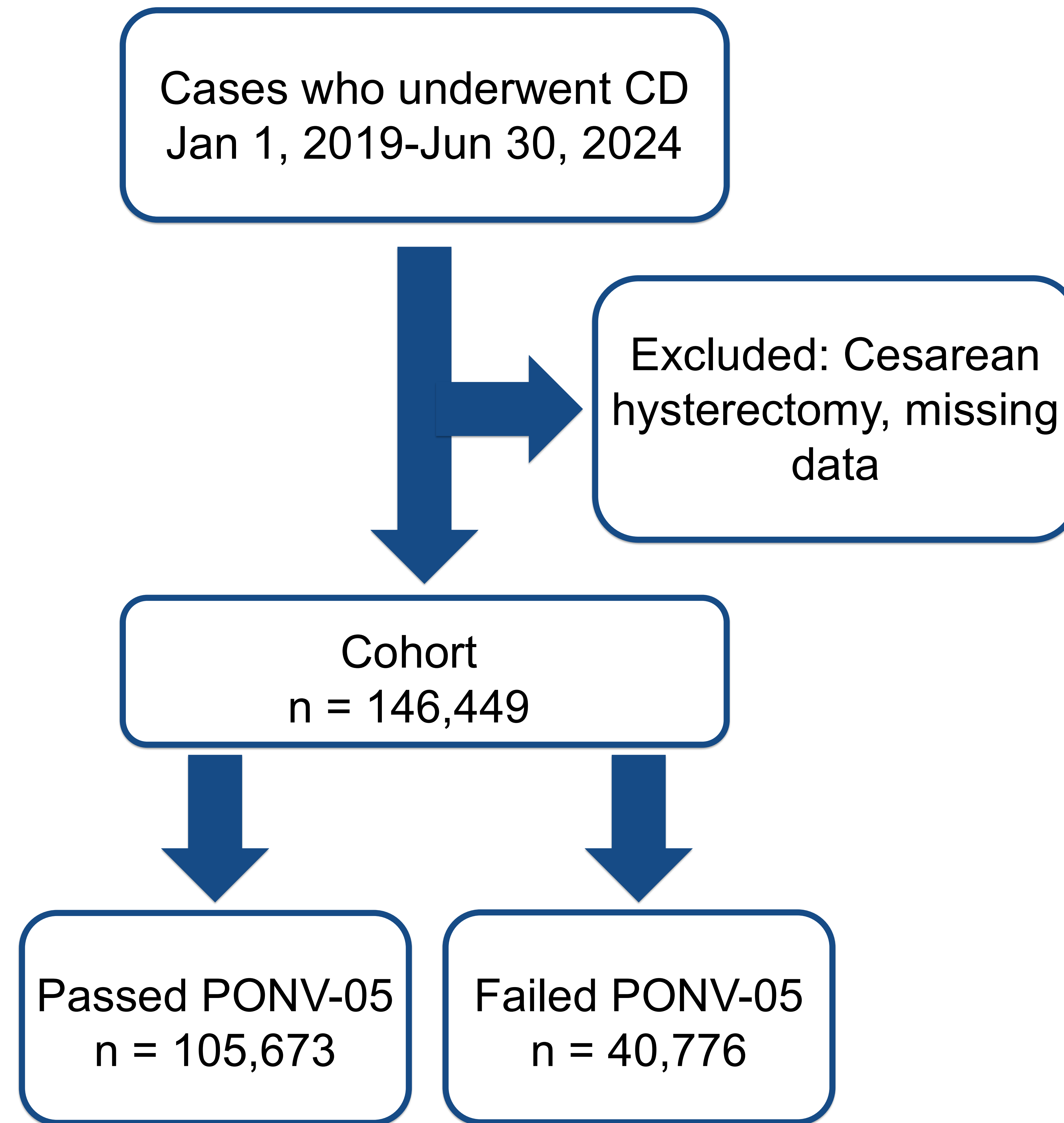
- CD: 30% of live US births in 2023
- PONV: 30-80% in this population
- MPOG metric
 - PONV-01, updated in 2022 to PONV-05
 - Success:
 - ≥ 2 antiemetic agents
 - Different classes
 - Preoperatively or intraoperatively

Aims

- Describe PONV prophylaxis patterns in patients undergoing CD across 69 MPOG-participating institutions from 2019-2024



STUDY DESIGN AND METHODS



- Retrospective cohort study using MPOG database
- Cases stratified by pass/fail of PONV-05 metric
- Descriptive statistics
- Standardized mean differences (SMDs)

RESULTS (TABLE 1)

Data are in number (%)

	Overall	Failed PONV-05	Passed PONV-05	SMD
Total number	146449	40776	105673	
Year				
2019	22344 (15.3)	9159 (22.5)	13185 (12.5)	0.406
2020	23247 (15.9)	8179 (20.1)	15068 (14.3)	
2021	24542 (16.8)	7310 (17.9)	17232 (16.3)	
2022	24963 (17.0)	6443 (15.8)	18520 (17.5)	
2023	24995 (17.1)	4895 (12.0)	20100 (19.0)	
2024	26358 (18.0)	4790 (11.7)	21568 (20.4)	
Total risk factors				
2	99 (0.1)	43 (0.1)	56 (0.1)	0.082
3	5806 (4.0)	1958 (4.8)	3848 (3.6)	
4	118283 (80.8)	33115 (81.2)	85168 (80.6)	
5	21500 (14.7)	5523 (13.5)	15977 (15.1)	
6+	761 (0.5)	137 (0.3)	624 (0.6)	
PONV risk factors				
Age <50	146339 (99.9)	40744 (99.9)	105595 (99.9)	0.002
Female sex	146426 (100.0)	40772 (100.0)	105654 (100.0)	0.007
History of PONV	4207 (2.9)	732 (1.8)	3475 (3.3)	0.095
Inhalational anesthesia use				
>1hr	2594 (1.8)	580 (1.4)	2014 (1.9)	0.038
Opioid use	143673 (98.1)	39707 (97.4)	103966 (98.4)	0.070
Non-smoker	141951 (96.9)	39403 (96.6)	102548 (97.0)	0.023
Total number of antiemetics given				
0	4968 (3.4)	4968 (12.2)	0 (0.0)	459.722
1	35809 (24.5)	35808 (87.8)	1 (0.0)	
2	69880 (47.7)	0 (0.0)	69880 (66.1)	
3	30159 (20.6)	0 (0.0)	30159 (28.5)	
4+	5633 (3.8)	0 (0.0)	5633 (5.4)	

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Antiemetics given, total				
5-HT3 Receptor Antagonists	137502 (93.9)	32860 (80.6)	104642 (99.0)	0.64
Anticholinergics	508 (0.3)	7 (0.0)	501 (0.5)	0.092
Antidopaminergics	51948 (35.5)	1735 (4.3)	50213 (47.5)	1.136
Antihistamines	16013 (10.9)	222 (0.5)	15791 (14.9)	0.559
Glucocorticoids	75244 (51.4)	704 (1.7)	74540 (70.5)	2.053
Neurokinin-1 Receptor Agonists	62 (0.0)	3 (0.0)	59 (0.1)	0.027
Phenothiazines	3958 (2.7)	84 (0.2)	3874 (3.7)	0.253
Other	3520 (2.4)	193 (0.5)	3327 (3.1)	0.202
Single antiemetics given				
5-HT3 Receptor Antagonists	32861 (22.4)	32860 (80.6)	1 (0.0)	2.881
Antidopaminergics	1735 (1.2)	1735 (4.3)	0 (0.0)	0.298
Antiemetic combinations, 2 total given				
5-HT3 Receptor Antagonists + glucocorticoids	40798 (27.9)	0 (0.0)	40798 (38.6)	1.121
5-HT3 Receptor Antagonists + antidopaminergics	24027 (16.4)	0 (0.0)	24027 (22.7)	0.767
Antiemetic combinations, 3 total given				
5-HT3 Receptor Antagonists + glucocorticoids + antidopaminergics	17597 (12.0)	0 (0.0)	17597 (16.7)	0.632
5-HT3 Receptor Antagonists + glucocorticoids + antihistamines	7978 (5.4)	0 (0.0)	7978 (7.5)	0.404

CONCLUSIONS

- In this cohort, 72% of patients passed the PONV-05 metric
- Guideline compliant prophylaxis increased over the duration of the study
- The most common prophylaxis: 5-HT3 receptor antagonists + glucocorticoids
- Further research to assess impact of PONV-05 success on the occurrence of PONV