



# Survey on Post-Cesarean Section Analgesia in Mainland China:

Clinical Database Project by the Chinese Medical Association Obstetric Anesthesia Group

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## Background

- Regional disparities in China lead to varied post-cesarean analgesia standards.
- This prospective survey examines these differences to improve pain management practices.

## Study design and Methods

- This ethically approved study uses data from a Chinese nationwide obstetric anesthesia survey.
- N=2,492 cesarean sections from 29 hospitals (from Sep. 2023 to Nov. 2024 )
- Analgesia methods, efficacy (post-op days 1-3), and adverse events were documented.

# Results

## 1. PCA usage

- Main analgesic method: PCA pump (2226 cases)
- Administration routes: intravenous (77.76%), epidural (22.10%), subarachnoid space (3 cases)

## 2. Epidural morphine

- usage rate: 14.97%
- Average dose:  $1.9 \pm 0.29$  mg (maximum 3 mg)
- Significantly reduce resting pain 1-3 days after surgery (with no difference in exercise pain)
- Increased risk of itching, nausea, and vomiting

## 3. Incidence of adverse reactions

- Nausea and vomiting: 4.69%
- Itchy skin: 3.28%

## 4. PCA formula

- Intravenous PCA: sufentanil+adjuncts (such as buprenorphine, dexmedetomidine)+antiemetic drugs
- Epidural PCA: sufentanil+ropivacaine, or ropivacaine alone

## 5. Remedial analgesia options

- Preferred NSAIDs: Diclofenac acid, Flurbiprofen ester, Indomethacin
- Neural block: only 11 cases (TAP)

## 6. Pain rating data (Table 1)



Characteristic	Intravenous N = 1,731	Epidural N = 492	Overall N = 2,223 <sup>1</sup>	p-value <sup>2</sup>
<b>epidural morphine, n (%)</b>				<b>&lt;0.001</b>
N	1,443 (88.15%)	313 (64.27%)	1,756 (82.67%)	
Y	194 (11.85%)	174 (35.73%)	368 (17.33%)	
Missing	94	5	99	
<b>PCA<sup>3</sup> pump usage time (day), n (%)</b>				<b>&lt;0.001</b>
1	189 (11.05%)	363 (74.08%)	552 (25.09%)	
2	1,363 (79.71%)	127 (25.92%)	1,490 (67.73%)	
3	158 (9.24%)	0 (0.00%)	158 (7.18%)	
Missing	21	2	23	
<b>Pain scores at rest on POD<sup>4</sup> 1, Mean (SD)</b>	<b>2.1 (1.87)</b>	<b>2.7 (1.94)</b>	<b>2.2 (1.90)</b>	<b>&lt;0.001</b>
Missing	55	22	77	
<b>Pain scores at rest on POD 2, Mean (SD)</b>	<b>1.4 (1.26)</b>	<b>1.4 (1.30)</b>	<b>1.4 (1.27)</b>	<b>0.900</b>
Missing	267	43	310	
<b>Pain scores at rest on POD 3, Mean (SD)</b>	<b>0.6 (0.94)</b>	<b>0.9 (1.03)</b>	<b>0.6 (0.96)</b>	<b>&lt;0.001</b>
Missing	339	239	578	
<b>Pain scores at ambulating on POD 1, Mean (SD)</b>	<b>3.7 (2.33)</b>	<b>5.0 (2.30)</b>	<b>4.0 (2.38)</b>	<b>&lt;0.001</b>
Missing	57	23	80	
<b>Pain scores at ambulating on POD 2, Mean (SD)</b>	<b>2.5 (1.55)</b>	<b>3.5 (1.88)</b>	<b>2.8 (1.68)</b>	<b>&lt;0.001</b>
Missing	251	42	293	
<b>Pain scores at ambulating on POD 3, Mean (SD)</b>	<b>1.5 (1.25)</b>	<b>2.4 (1.79)</b>	<b>1.6 (1.38)</b>	<b>&lt;0.001</b>
Missing	353	240	593	
<b>Need for rescue medication on POD 1, n (%)</b>				<b>0.113</b>
N	590 (88.86%)	280 (85.11%)	870 (87.61%)	
Y	74 (11.14%)	49 (14.89%)	123 (12.39%)	
Missing	1,067	163	1,230	
<b>Need for rescue medication on POD 2, n (%)</b>				<b>0.533</b>
N	617 (97.47%)	274 (96.48%)	891 (97.16%)	
Y	16 (2.53%)	10 (3.52%)	26 (2.84%)	
Missing	1,098	208	1,306	
<b>Need for rescue medication on POD 3, n (%)</b>				<b>0.003</b>
N	602 (99.34%)	134 (95.71%)	736 (98.66%)	
Y	4 (0.66%)	6 (4.29%)	10 (1.34%)	
Missing	1,125	352	1,477	
<b>Nausea and Vomiting</b>				<b>0.367</b>
N	1592 (95.56%)	440 (94.42%)	2032 (95.31%)	
Y	74 (4.44%)	26 (5.58%)	100 (4.69%)	
missing	65	26	91	
<b>Itching</b>				<b>&lt;0.001</b>
N	1635 (98.20%)	427 (91.43%)	2062 (96.72%)	
Y	30 (1.80%)	40 (8.57%)	70 (3.28%)	
missing	66	25	91	

**Table 1:**  
**Postoperative  
analgesia effect  
with different  
analgesia pump  
routes**



<sup>1</sup>n (%); Mean (SD)

<sup>2</sup>Pearson's Chi-squared test;  
Welch Two Sample t-test

<sup>3</sup>PCA, patient-controlled analgesia

<sup>4</sup>POD, post-operative day





## Conclusion & Discussion

- In China, IV-PCA dominates post-cesarean analgesia, but analgesic techniques and medication usage **vary widely**.
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- Despite guideline recommendations, morphine remains **underused**.
- This observation highlights the need for further **standardization** of obstetric anesthesia practices nationwide.

Thank  
you

