

Intrathecal Dexmedetomidine in Cesarean Section Spinal Anesthetics and Post Operative Pain Scores; A Retrospective Review

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Introduction: Identifying alternative analgesic adjuvants for cesarean section spinal anesthetics is growing in popularity and necessity. Due to narcotic shortages and post operative monitoring limitations, one community hospital began routinely adding 10ug of intrathecal dexmedetomidine to their cesarean spinal anesthetics. This retrospective study compares patient’s post operative pain, opioid consumption and hypotension between patients who received hyperbaric bupivacaine only and those who received bupivacaine and 10ug intrathecal dexmedetomidine over the course of two years.

Methods: IRB approval was obtained for this retrospective study. All women 18 and older delivered via cesarean section for the two years spanning the introduction of intrathecal dexmedetomidine were eligible for inclusion. See Figure 1 for exclusion criteria. The primary outcome measured was VAS postoperative pain scores. Secondary outcomes included morphine milligram equivalents (MME), intraoperative mean arterial pressure (MAP), and postoperative mean arterial pressure (MAP).

References

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2. Li X-X, Li Y-M, Lv X-L, Wang X-H, Liu S. The efficacy and safety of intrathecal dexmedetomidine for parturients undergoing cesarean section: a double-blind randomized controlled trial. BMC Anesthesiol. 2020;20(1):190. doi:10.1186/s12871-020 01109-4

3. Wang Y-Q, Zhang X-J, Wang Y. Effect of intrathecal dexmedetomidine on cesarean section during spinal anesthesia: a meta-analysis of randomized trials. Drug Des Devel Ther. 2019;13:2933-2939. doi:10.2147/DDDT.S207812

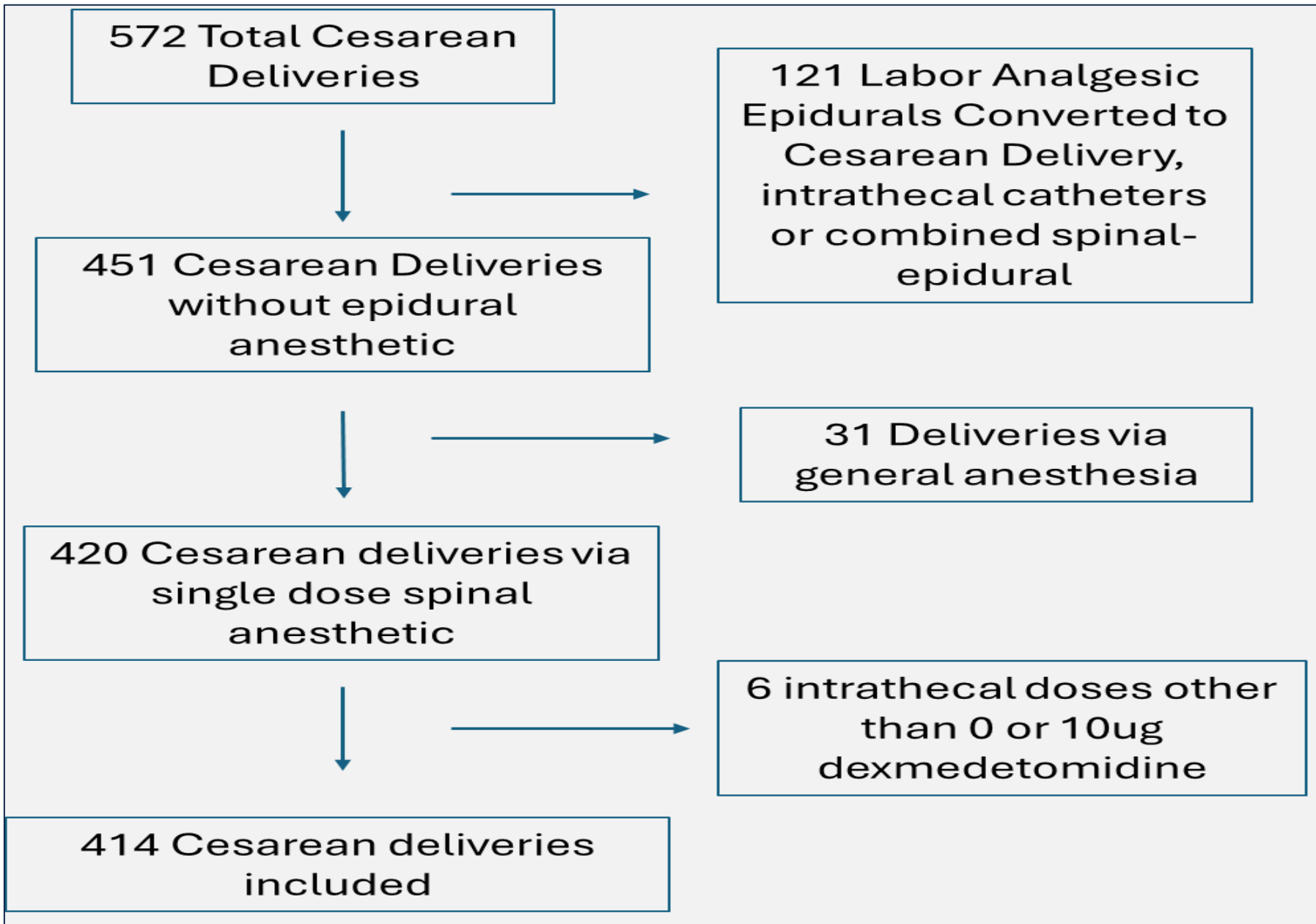
4. Mo X, Huang F, Wu X, Feng J, Zeng J, Chen J. Intrathecal dexmedetomidine as an adjuvant to plain ropivacaine for spinal anesthesia during cesarean section: a prospective, double-blinded, randomized trial for ED50 determination using an up-down sequential allocation method. BMC Anesthesiol. 2023;23(1):325. doi:10.1186/s12871-023-02275-x



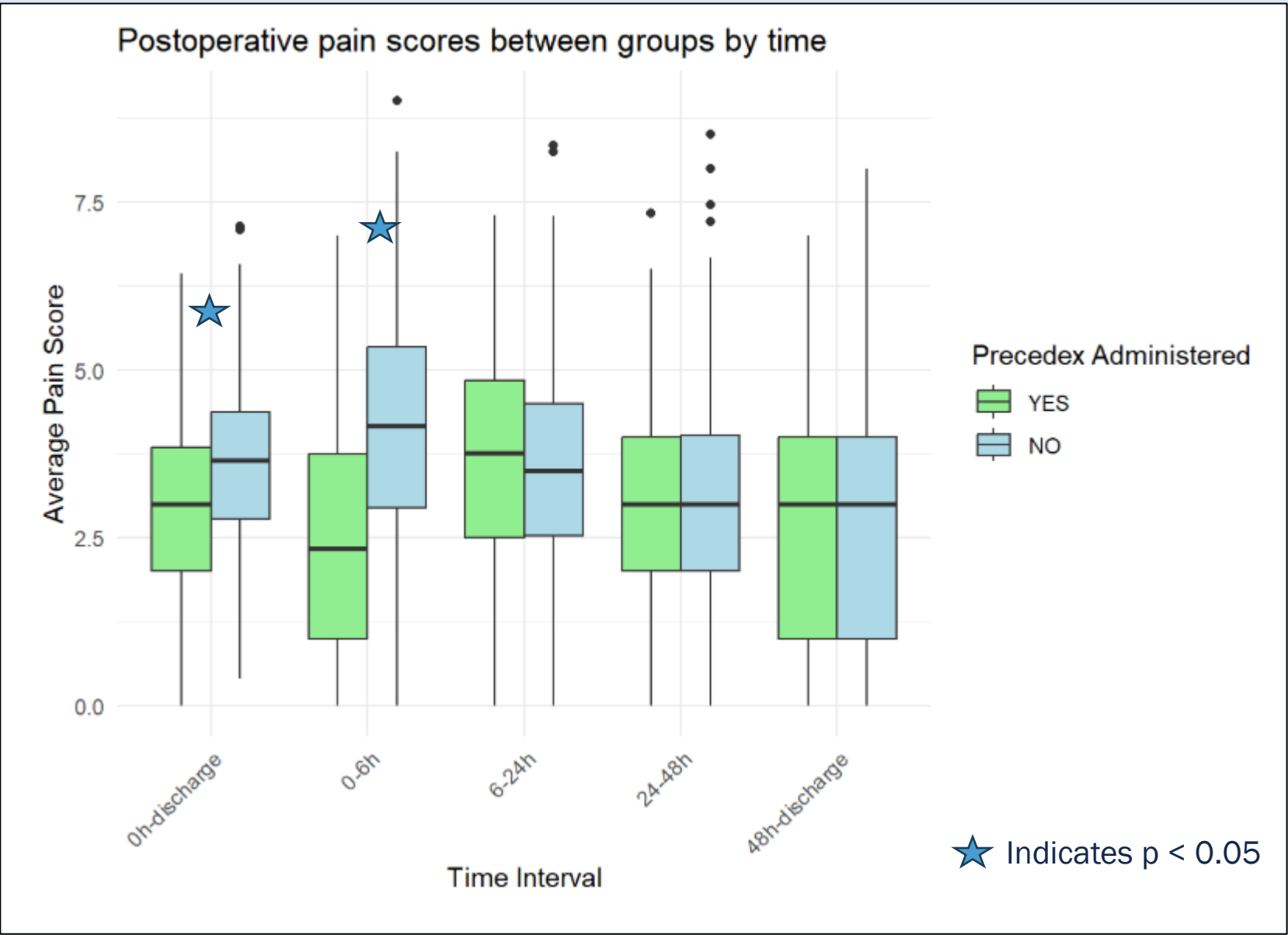
- ### Key Takeaway Points
- Intrathecal dexmedetomidine reduced pain scores significantly for 6 hours after anesthesia end.
 - Opioid consumption was significantly reduced for 24 hours after anesthesia in the dexmedetomidine group.
 - Intrathecal dexmedetomidine did significantly increase intraoperative hypotension that persisted for 6 hours after anesthesia end.
 - Intrathecal dexmedetomidine should be considered cautiously as an adjuvant in select caesarean section spinal anesthetics.

Number of Encounters	Year 1		Year 2		Total		
If Dexmedetomidine Administered	YES	NO	YES	NO	YES	NO	TOTAL
Encounters included	15	219	148	32	163	251	414

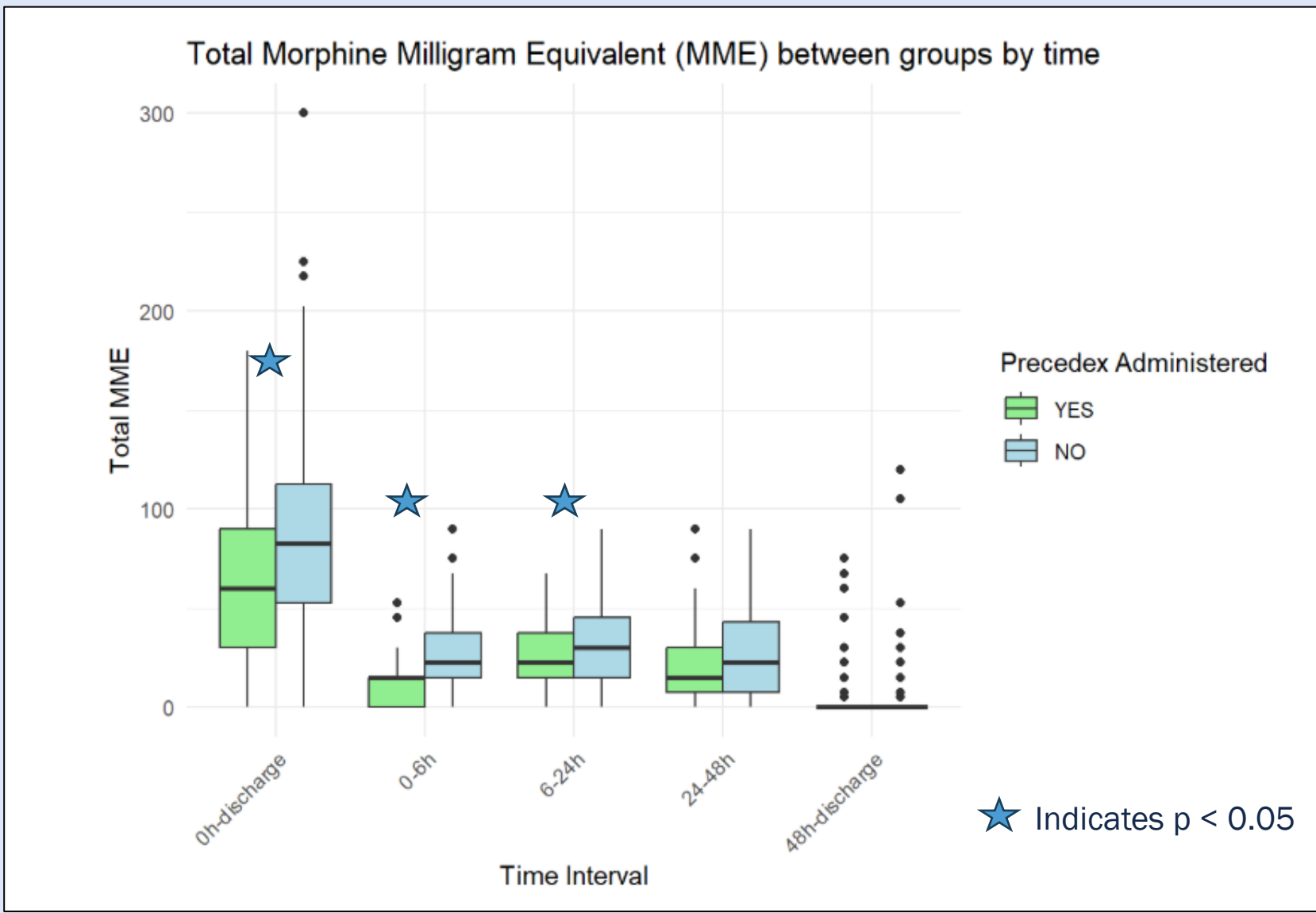
Figure 1. Exclusion criteria flowchart



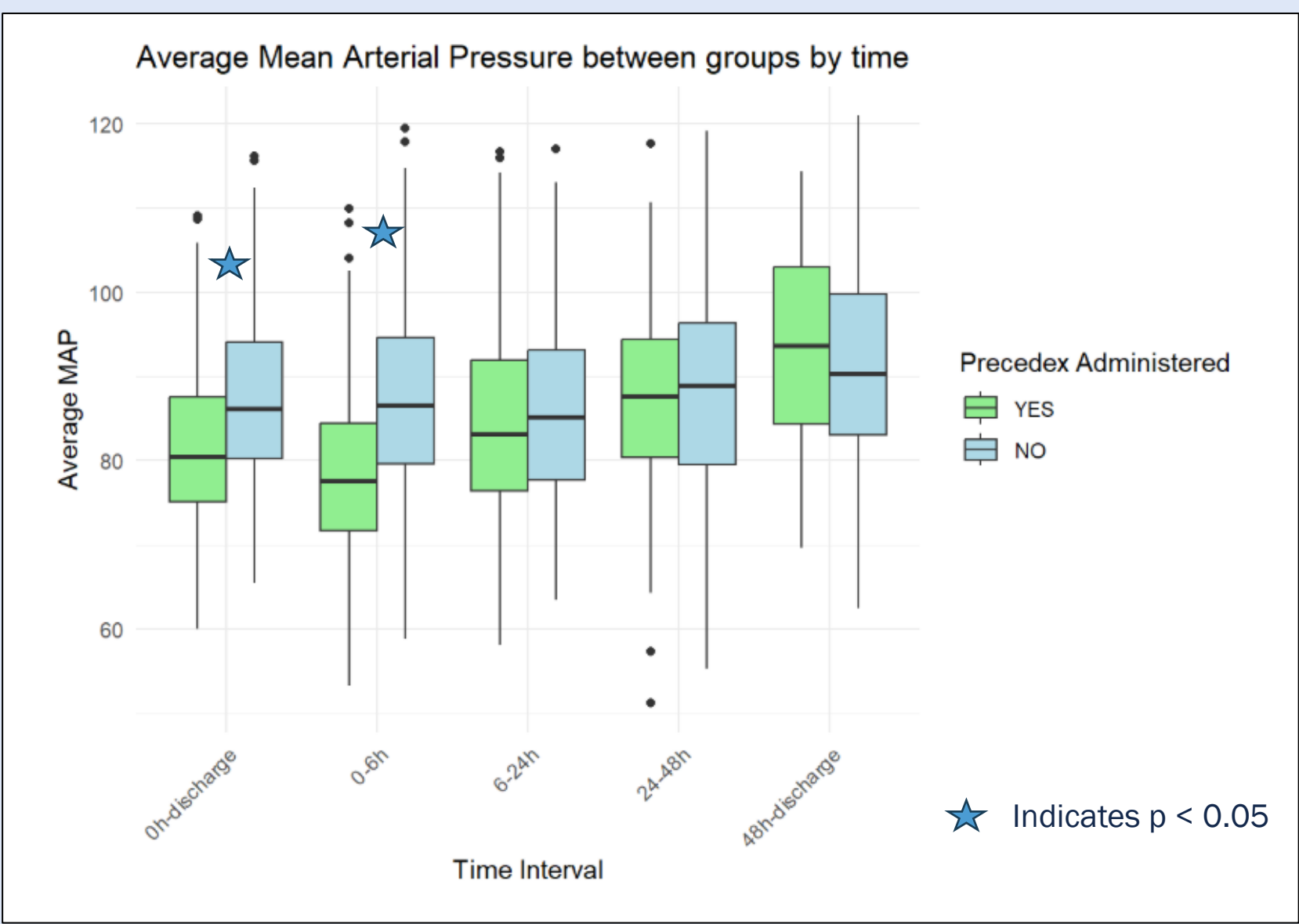
Results



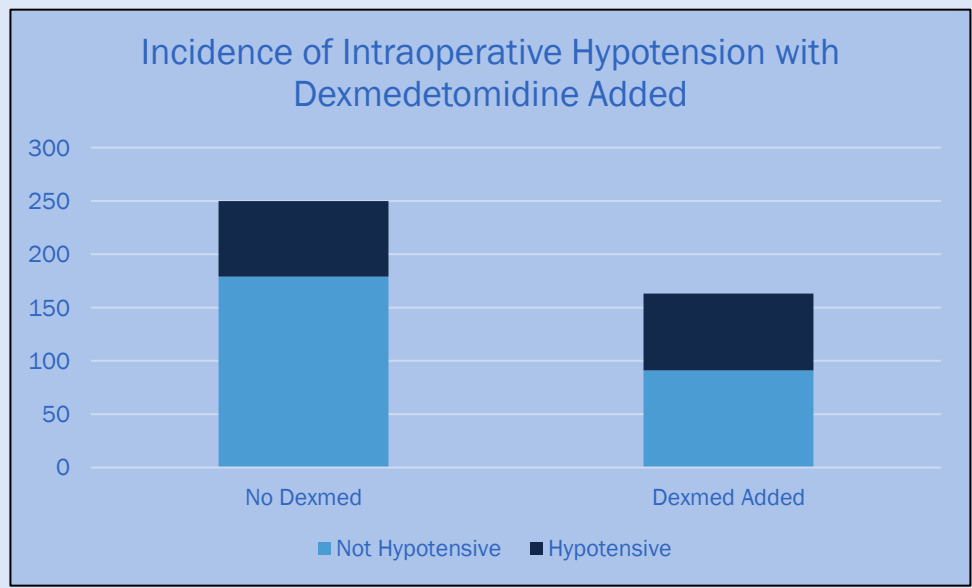
Dexmed Administered:	NO (N=251)	YES (N=163)	P-value
Average post-op pain score			
Median [Min, Max]	3.65 [0.400, 7.14]	3.00 [0, 6.44]	<0.001
Avg post-op pain score (0-6h)			
Median [Min, Max]	4.17 [0, 9.00]	2.33 [0, 7.00]	<0.001
Avg post-op pain score (6-24h)			
Median [Min, Max]	3.50 [0, 8.33]	3.76 [0, 7.30]	0.591
Avg post-op pain score (24-48h)			
Median [Min, Max]	3.00 [0, 8.50]	3.00 [0, 7.33]	0.529
Avg post-op pain score (48h-discharge)			
Median [Min, Max]	3.00 [0, 8.00]	3.00 [0, 7.00]	0.673



Precedex Administered:	NO (N=251)	YES (N=163)	P-value
Total post-op MME			
Median [Min, Max]	82.5 [0, 300]	60.0 [0, 180]	<0.001
Total post-op MME (0-6h)			
Median [Min, Max]	22.5 [0, 90.0]	15.0 [0, 52.5]	<0.001
Total post-op MME (6-24h)			
Median [Min, Max]	30.0 [0, 90.0]	22.5 [0, 67.5]	0.0465
Total post-op MME (24-48h)			
Median [Min, Max]	22.5 [0, 90.0]	15.0 [0, 90.0]	0.059
Total post-op MME (48h-discharge)			
Median [Min, Max]	0 [0, 120]	0 [0, 75.0]	0.912



Precedex Administered:	NO (N=251)	YES (N=163)	P-value
Average post op MAP			
Median [Min, Max]	86.1 [65.5, 116]	80.4 [60.0, 109]	<0.001
Avg post-op MAP (0-6h)			
Median [Min, Max]	86.6 [58.8, 119]	77.5 [53.2, 110]	<0.001
Avg post-op MAP (6-24h)			
Median [Min, Max]	85.2 [63.4, 117]	83.1 [58.1, 117]	0.203
Avg post-op MAP (24-48h)			
Median [Min, Max]	88.9 [55.3, 119]	87.7 [51.2, 118]	0.473
Avg post-op MAP (48h-discharge)			
Median [Min, Max]	90.3 [62.5, 121]	93.7 [69.7, 114]	0.367



Dexmedetomidine Administered:	NO (N=251)	YES (N=163)	Overall (N=414)	P-value
Intraoperative Hypotension (Defined as MAP < 65 for > 15 minutes intraoperatively)				
No	179 (71.3%)	91 (55.8%)	270 (65.2%)	0.00145
Yes	71 (28.3%)	72 (44.2%)	143 (34.5%)	