Association of patient and clinical characteristics with regional anesthesia without additional medication administration among patients who underwent cesarean delivery: a single center study

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Background

- The ASA statement of the use of adjuvant medications and management of intraoperative pain during cesarean delivery provides guidance on treating inadequate analgesia during cesarean delivery (CD).
- The aim of this study was to determine which variables were associated with regional anesthesia for CD without the use of additional medication.

https://www.asahq.org/standards-and-practice-parameters/statement-on-the-use-of-adjuvant-medications-and-management-of-intraoperative-pain-during-cesarean-delivery

Study Design: Retrospective and Prospective Observational Study

Methods

- Baylor Scott & White Research Institute IRB approved our study
- Patients who had cesarean deliveries at our hospital from July 1, 2022 to June 30, 2024 who identified as Black or African American only, Hispanic, or White or Caucasian only were included
- White race served at the reference race
- A study investigator retrieved data from our electronic medical record (EPIC) and entered it into REDCap

Results

Variable	Black (N=322)	Hispanic (N=562)	White (N=733)	Black vs White P value	Hispanic vs White P value
Emergency obstetric indication for delivery (yes)	97 (30.1%)	137 (24.4%)	158 (21.6%)	**0.003***	0.230
Month of academic year (median (IQR))	7 (4-9)	6 (3-9)	6 (3-9)	0.052	0.897
Received general anesthesia (yes)	47 (14.6%)	65 (11.6%)	82 (11.6%)	0.120	0.830
Failure of neuraxial anesthesia (conversion to general anesthesia)					
Spinal or combined spinal epidural	6 (3.1%)	7 (2.0%)	11 (2.2%)	0.549	0.890
Activation of labor epidural catheter	5 (8.2%)	14 (16.7%)	10 (12.7%)	0.397	0.470
Removal of labor epidural catheter followed by new neuraxial anesthetic	3 (8.6%)	3 (3.4%)	1 (1.3%)	0.087	0.624
Received neuraxial anesthesia without additional medication (yes)	204 (63.4%)	376 (66.9%)	522 (71.2%)	**0.011***	0.095
Received neuraxial anesthesia with additional medications (yes)	71 (22.1%)	121 (21.5%)	129 (17.6%)	0.089	0.076
Additional medications					
Intravenous fentanyl (yes)	41 (12.7%)	71 (12.6%)	69 (9.4%)	0.104	0.064
Intravenous dexmedetomidine (yes)	29 (9.0%)	62 (11.0%)	60 (8.2%)	0.659	0.082
Intravenous midazolam (yes)	7 (2.2%)	9 (1.6%)	9 (1.2%	0.247	0.569
Intravenous ketamine (yes)	5 (1.6%)	6 (1.1%)	4 (0.6%)	0.142	0.345
Intravenous propofol (yes)	6 (1.9%)	14 (2.5%)	9 (1.2%)	0.422	0.088
Inhaled nitrous oxide (yes)	8 (2.5%)	8 (1.4%	10 (1.4%)	0.196	0.928

- Compared to White patients, Black patients had a higher incidence of emergency obstetric indication for delivery
- Compared to White patients, Black patients had a lower incidence of receiving regional anesthesia without additional medication
- On multivariate analysis, Black vs White race not independently associated with regional anesthesia without additional meds (aOR 0.76; 95% CI 0.57-1.013; p=0.06)

Discussion

- Patients who identified as Black had a statistically and clinically significant lower incidence of regional anesthesia without additional medication
- However, Black race was not independently associated with a decreased chance for regional anesthesia without additional medication
- Emergency obstetric indication independently associated with regional anesthesia without additional medication
- Limitations of the study are that there were only a few variables collected for each patient and that this was a single center study

Conclusion: Black vs White race NOT independently associated with lower incidence of regional anesthesia without additional medication for cesarean delivery