

General Anesthesia for Cesarean Delivery in African Americans: The Needle Has Not Moved

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Background/Introduction:

- Neuraxial anesthesia is preferred over general anesthesia (GA) as the primary anesthetic technique for Cesarean Delivery (CD) due to lower maternal morbidity and mortality.
- Data from two decades ago demonstrated that African American (AA) mothers undergoing CD are more likely to receive GA compared to other racial and ethnic groups.
- Our objective was to analyze current anesthetic practice for CD's and determine if the paradigm had shifted in the management of AA parturients.

Methods:

- The current study was a retrospective analysis of anesthesia encounters for all CDs that occurred at a single tertiary academic center between January 1st, 2019 and December 31st, 2020.
- Data was abstracted from the EMR system and then systematically codified by manual chart review.
- Data collected included: *Maternal demographics* (race, age, BMI, parity, comorbidities, gestational age), *Urgency of CD* (elective, urgent, or emergent), and *Indication for GA* (failed primary block, failed labor epidural conversion, or primary).
- Cases where GA was the primary anesthetic were further analyzed for indication (fetal, obstetric, maternal, or contraindication to neuraxial block).
- Analyses of differences were evaluated using a series of chi-square tests.

Results:

- A total of 6,077 deliveries were analyzed
- 2,495 (41.2%) of these were Cesarean deliveries.
- Of these, 258 (10.3%) were done under general anesthesia.
- The rate of CD was significantly different between races (P < 0.0001), with a significantly greater proportion of AA mothers undergoing CD compared to white mothers (P = 0.0044). (Figure 1).
- The rate of CD was significantly greater in the Other group compared to White and AA mothers (P< 0.0001)

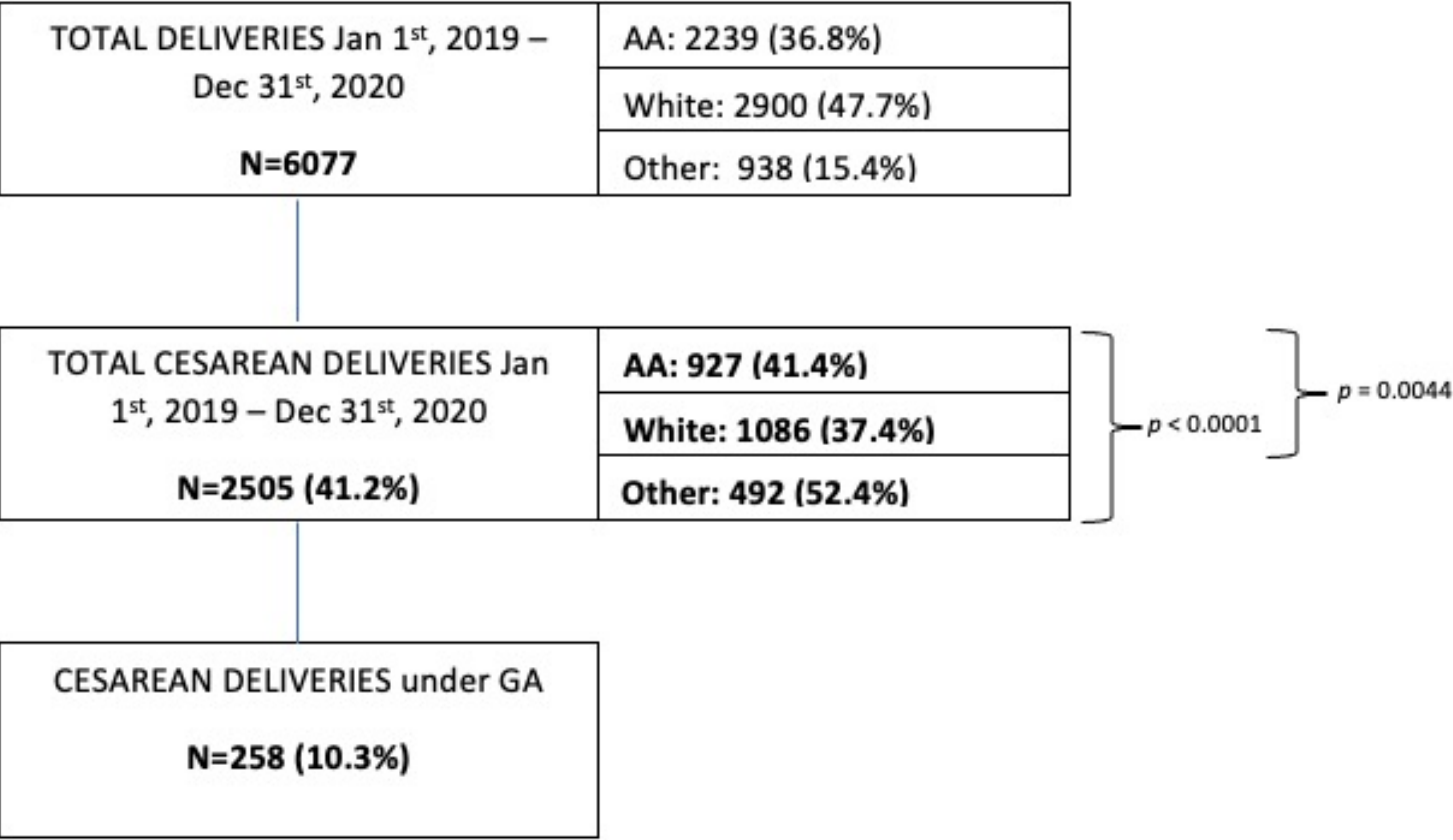


Figure 1: All deliveries, including Cesarean deliveries and Cesarean deliveries occurring under GA, differentiated by race.

	Race = AA (N = 120)	Race = White (N = 106)	Race = Other (N = 32)
Age			
≤19	11	5	4
20-29	53	46	11
30-39	51	53	15
≥40	5	3	2
Parity			
0	42	49	11
1	35	30	7
≥2	43	28	14
BMI			
≤24.9	14	15	7
25-29.9	15	34	10
30-39.9	58	35	10
≥40	30	20	4
Previous CD			
Yes	46	30	14
No	74	76	18
Comorbidities			
HTN	50	29	7
DM	26	18	2
PreE	16	20	10

Table 1: Maternal demographics of the 258 Cesarean deliveries performed under general anesthesia over the years of 2019-2020 at a single tertiary academic center. There were no major differences in baseline demographics of women undergoing CD under GA.

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Results continued:

- Among mothers who had a CD under GA, a significantly greater proportion were AA compared to white mothers (P = 0.0346).
- AA mothers had a significantly higher proportion of CD's under GA compared to mothers of other races (P = 0.0005)
- 66 (55.5%) AA mothers and 49 (46.2%) white mothers received GA as the primary anesthetic technique. The significance of this finding was underpowered.

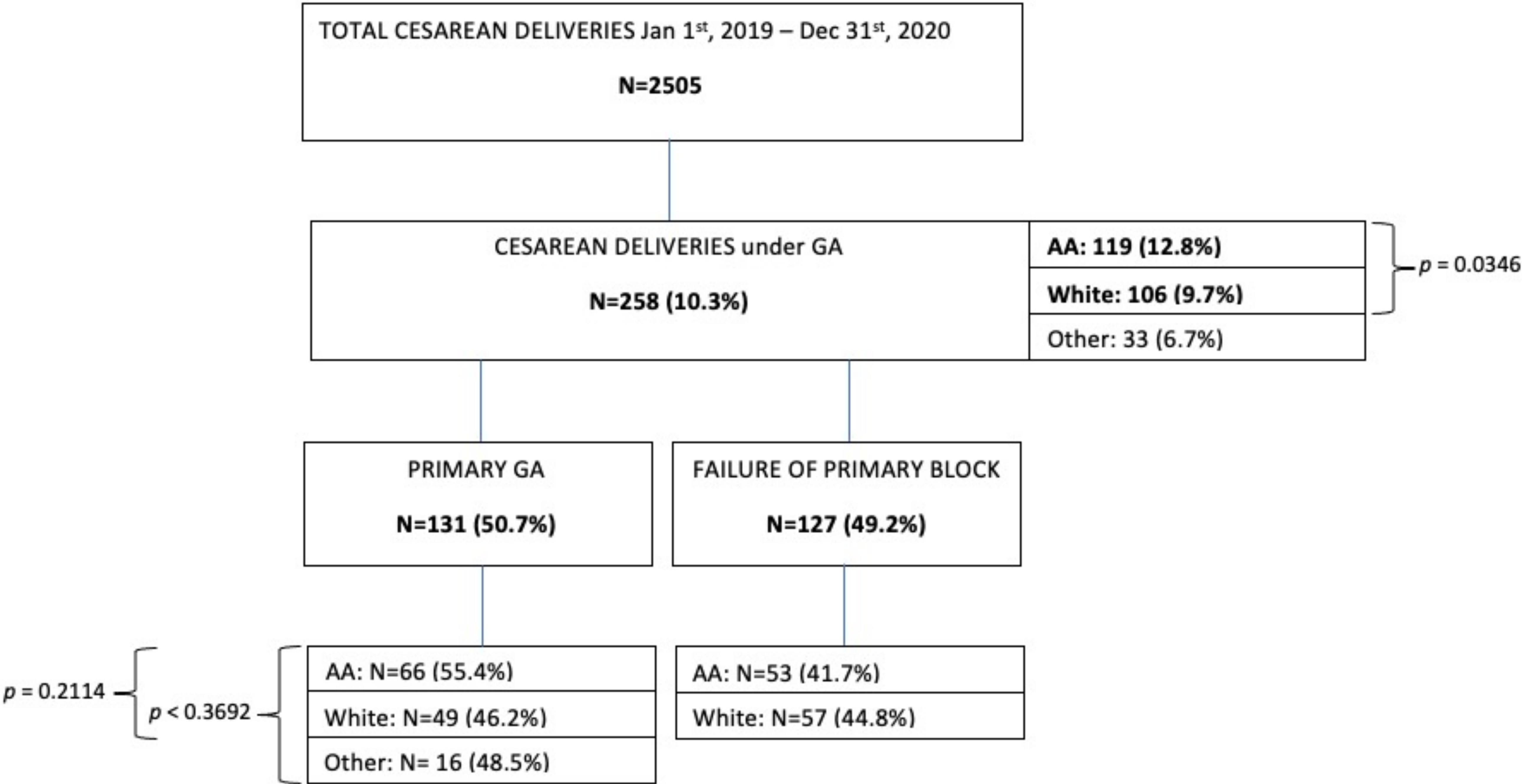


Fig 2: Differences in rates of Cesearian delivery under GA by race and differences in rates of CD where GA is the primary anesthetic technique.

- Among mothers where GA was the primary anesthetic technique, rates of preterm delivery, fetal indication for CD, and urgency were all higher among AA mothers relative to white mothers.
- The significance of these findings were similarly underpowered but may be clinically relevant.

	Race = AA (N = 66)	Race = White (N = 32)
Gestational age (week/day)		
≤24w	0	2
24w1d – 36w6d	47 (71.2%)	27 (55.1%)
37w – 38w6d	9	14
≥39w	10	6
CD urgency		
Elective	6	14
Urgent	15	16
Emergent	45 (68.1%)	19 (38.7%)
Estimated blood loss (ml)		
<1000	42	31
1000-1500	12	10
1501-2000	5	3
>2000	7	5
Indication for primary GA		
Fetal indication (e.g. abnormal FHR, umbilical cord prolapse, etc.)	39 (59.1%)	17 (34.6%)
Obstetric indication (e.g. PP hemorrhage, placenta accreta, uterine rupture, etc.)	12	12
Maternal indication (e.g. anaphylaxis, chorioamnionitis, amniotic fluid embolism, etc.)	15	20

Table 2: Case characteristics of AA and white mothers who underwent Cesarean delivery under general anesthesia where general anesthesia was the primary anesthetic technique.

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Discussion/Conclusion:

References:

Based on data from this single academic institution:

1. Rates of CD are higher among AA mothers relative to white mothers.
2. Rates of CD are higher among other races compared to AA and white mothers
3. Rates of CD done under GA were higher among AA mothers relative to both white mothers and mothers of other races.
4. There is a suggestion that the rate of primary GA is higher in AA mothers compared to white mothers. The absolute difference in rates of primary GA of 9.3% between AA and white mothers may be clinically meaningful. Our study was underpowered with only 28.5% power to determine statistical significance.
5. There is suggestion that the differences in GA use could be at least partially due to AA mothers having higher rates of preterm delivery and fetal emergencies leading to emergent CDs; however, the study was underpowered for determining the significance of this, and other factors may explain the higher rates of GA use.
6. Efforts to decrease the incidence of GA in AA mothers, especially as a primary anesthetic for CD requires a robust and multidisciplinary effort that includes interventions at all levels of maternal care – both antepartum and peripartum.

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