

Cesarean Section by Maternal Choice: What are the implications?

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BACKGROUND

Cesarean section has both maternal and fetal indications which can be life saving for both mothers and neonates. Cesarean section, however, is associated with maternal and fetal risks which can impact future health and pregnancy outcomes. Women who request a primary cesarean section by choice represent a unique obstetrical population that is not fully understood.

OBJECTIVES

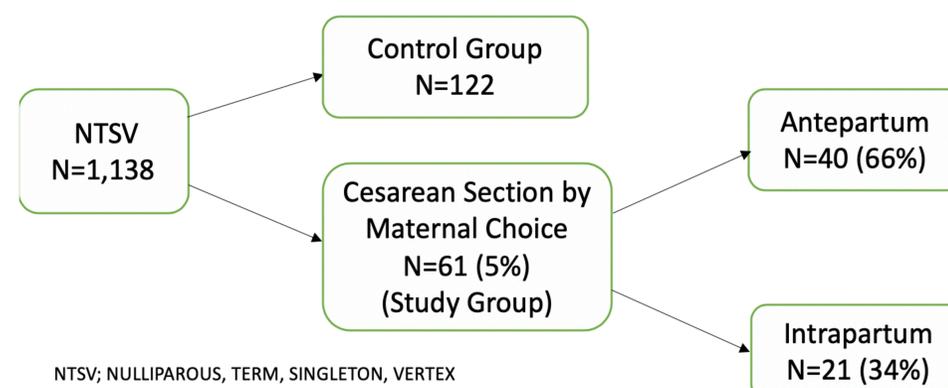
The objectives of our study were to:

- 1) determine the prevalence of cesarean delivery rate due to maternal request among NTSV (nulliparous, term, singleton, vertex) patients;
- 2) identify the clinical profile, if any, of these patients
- 3) compare the perinatal outcomes between NTSV patients who delivered by primary cesarean section because of maternal choice (study group) versus those NTSV patients who did not request cesarean (control group).

MATERIALS AND METHODS

This was an IRB-approved retrospective case control study at a single academic institution. Data query of EMR was performed using ICD-10 and CPT codes to identify all NTSV patients who had a primary cesarean section by maternal choice from November 2018 to July 2019. We hypothesized that prevention of neonatal morbidity was a main reason in the maternal decision making to choose a cesarean. Therefore, we used composite neonatal morbidity (CNM, 1 or more outcomes) as the primary outcome for sample calculation. Assuming a baseline CNM of 5% for the control group and a non-inferiority margin of 15% a total of 90 patients (45 each group) was needed (using 1-tailed alpha=0.05 and beta=0.2). In order to increase power, cases were matched with the next two NTSV patients in labor who delivered vaginally or by medically indicated cesarean section. Secondary outcomes were the individual components of the CNM (16 components), as well as composite maternal morbidity (CMM) and its components (11 components). Women with a history of cesarean section, multiparas, breech presentation, multiple gestation, and preterm gestational age were excluded. The two groups were compared using the chi-square test or Fisher's exact test, as deemed appropriate, for categorical variables and the Mann-Whitney test for continuous data. Multivariable logistic regression was used to adjust for differences in baseline demographic/clinical characteristics. A p-value <0.05 was considered statistically significant. All analyses were performed using SAS version 9.4 (SAS Institute, Cary, NC).

FIGURE



RESULTS

A total of 1,138 NTSV patients were identified. Of these, 61 patients (study group) opted for cesarean section by maternal choice. The decision for cesarean was made in the antepartum period (AP) in 40 (66%) cases and in the intrapartum period (IP) in 21 (34%) cases. The study group was compared to 122 controls. The only significant differences in the demographic/clinical profile between cases and controls included: BMI (35.3 vs. 31.7 respectively, $p < 0.01$), birth weight (3552 vs. 3332, respectively, $p < 0.001$) and documented mental illness (41.0% vs. 22.1% respectively, $p < 0.01$). There was no significant difference in CNM (primary outcome) between cases and controls (6.6% vs. 5.7% respectively, $p < 1.00$). However, the risk for postpartum hemorrhage requiring blood transfusion was higher in the study group (4.9% vs. 0.0% respectively, $p < 0.04$). This risk was mainly carried by the group of patients who chose cesarean in the intrapartum period who had significantly higher risks for both CNM (14.29% vs. 5.74%, $p < 0.03$) and CMM (28.57% vs. 11.48%, $p < 0.001$) as compared to the control group.

CONCLUSIONS

Approximately 5% of NTSV patients were delivered by cesarean due to maternal choice. The profile of patients requesting cesarean section by maternal choice is characterized by increased BMI, birth weight and mental illness, mainly anxiety and depression. Cesarean by maternal choice in NTSV patients is not associated with improved neonatal outcome. On the contrary, there is increased composite maternal morbidity and composite neonatal morbidity when the decision for cesarean section was made intrapartum.