



A STUDY OF INDICATIONS AND FETOMATERNAL OUTCOME OF PRIMARY CAESAREAN SECTION IN MULTIPAROUS WOMEN- A PROSPECTIVE HOSPITAL BASED STUDY

Obstetrics & Gynaecology

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ABSTRACT

Background: Caesarean section is one of the most common obstetric procedures performed worldwide. The rate of Caesarean sections is rapidly increasing both in developed and developing countries. Caesarean section for the first time in multiparous women who delivered vaginally once or more is called as primary Caesarean section. **Methods:** A Prospective observational study was conducted at the department of Obstetrics and Gynaecology of a tertiary care hospital attached to a medical college, among multiparous women undergoing primary Caesarean section for the first time and fulfilling selection criteria during the period December 2018 to November 2020. The aim and objective of the study was to evaluate the frequency, indications & obstetric outcome of primary Caesarean section in multiparous women. **Results:** Present study found that frequency of primary caesarean section in multiparous subjects out of all caesarean sections was high (37.7%). Most common indications in the study for primary caesarean section in multiparous subjects were fetal distress, failure of induction of labour. There was no maternal mortality, but there was neonatal mortality, though it's frequency was less. There was no significant association between high risk factors and adverse obstetric outcome in primary caesarean section in multiparous subjects in this study. Prematurity and low birth weight played a significant role in adverse neonatal outcome. Booking status had no role in adverse maternal or neonatal outcome. **Conclusions:** This study concludes that multiparous women deserve the same attention during pregnancy and labour as that of primigravida and women with repeat caesarean section.

KEYWORDS

Caesarean, Multiparous women, Fetomaternal outcome.

INTRODUCTION

Caesarean section is one of the most common obstetric procedures performed worldwide. It is described as the delivery of a fetus, alive or dead, through an abdominal incision after the period of viability. It can be life saving for the child, the mother or both, in certain cases. Evolution of caesarean delivery as a safe procedure is one of the most important developments in modern obstetrics. The rate of caesarean sections is rapidly increasing both in developed and developing countries. In recent years, the rate of Caesarean section is higher than needed, which requires in depth study. WHO recommends 10-15 % ideal rate for Caesarean sections¹ since a rate higher than that does not cause any improvement in maternal and infant mortality rates.^{2,3}

A multiparous woman with previous vaginal delivery does not necessarily mean that she will have successful vaginal deliveries in subsequent pregnancies. Multiparous subjects may have high risk factors or indications which may need a Caesarean section. Caesarean section for the first time in multiparous women who delivered vaginally once, or more is called as primary caesarean section. Low age at marriage, low literacy rates, poverty, preference for male offspring, ignorance, and lack of knowledge about family planning measures are the factors associated in multiparous women. In multiparity, the size of fetus increases and hence the size of fetus and fetal head should be carefully estimated to check for cephalopelvic disproportion. In multiparous patients malpresentations are common due to pendulous abdomen and lordosis of lumbar spine and usually the head does not engage till onset of labour. As labour can be unpredictable so equal importance should be given to a primigravida and multigravida⁴.

The Robson classification recommended by the WHO appears to be the most appropriate system for assessing, monitoring, and comparing Caesarean section rates within health care facilities over time and between facilities. Robson classifies all women into one of ten categories which are based on five obstetric characteristics⁵.

- Parity (nullipara, multipara, with and without previous Caesarean section).
- Onset of labour (spontaneous, induced or not in labour).
- Gestational age (preterm, term).
- Fetal presentation (cephalic, breech or transverse)
- Number of fetus (single or multiple).

There is a common misbelief that if a mother delivers her first child

normally the subsequent deliveries will be normal. Hence most of the multiparous women ignore antenatal care visits and remain in subnormal state of health during pregnancy and labour. These women get expert supervision only in case of any emergency during pregnancy or labour, when a Caesarean section must be performed. Several studies have hence been conducted on the increased incidence of abdominal delivery throughout the country and in the world to look for the validity of this procedure. when used for the first time in the multipara. There is a general consideration that primigravida and previous Caesarean section is recognized as high-risk pregnancy whereas multiparous women who had previous normal vaginal delivery are considered as low risk group. However adverse obstetric outcome has been observed even in these women. Hence present study focuses on the frequency, indications, and obstetric outcome of primary Caesarean sections in multiparous women with previous vaginal delivery.

METHODS

The current study was a prospective observational study conducted in the Department of Obstetrics and Gynaecology at a Tertiary care Hospital to evaluate frequency, indications, and obstetric outcome of primary Caesarean sections in multiparous women with previous vaginal delivery. The data was collected from December 2018 to November 2020. All multiparous women undergoing primary Caesarean section for the first time and fulfilling selection criteria after their due consent were consecutively enrolled from labour room and indoor wards for the study until sample size was met.

The exclusion criteria were: i) Caesarean section done in multiparous women before 28 weeks in present pregnancy, ii) previous uterine surgery- myomectomy and hysterectomy, & ii) subjects not giving informed written consent. The case definition for a multiparous woman in present study was a woman who delivered vaginally once or more beyond the period of viability (28 weeks). After obtaining the necessary consent and explaining the nature and purpose of the study, detailed history of selected subjects was taken. It included age, booking status, parity, gestational age at time of admission and previous history of abortions, viable birth, stillbirth and neonatal death. General and systemic examination including obstetrical examination was done. Necessary investigations were recorded. Indications of all subjects who underwent emergency or elective Caesarean section, significant intra-operative findings such as type of uterine incision, cord around neck and complications such as

hemorrhage and extension of incision were documented. Postoperative complications till the day of discharge from the hospital were recorded for the study subjects. Neonates were attended by a paediatrician/neonatologist, and Apgar score at 5 minutes and birth weight was recorded. The neonates requiring resuscitation were resuscitated according to National Neonatology Forum Protocol for newborn resuscitation. They were observed for development of any further complications. Indications for admission to neonatal intensive care unit were noted. Preterm and very low birth weight babies were admitted and observed. Maternal outcome in the form of maternal morbidity (intraoperative and postoperative complications) was studied. Adverse neonatal outcome (neonatal morbidity and mortality) was also studied. Total obstetric outcome was studied which included both good and adverse outcome. Association of high-risk factors, booking status, bad obstetric history, gestational age, birth weight on obstetric outcome was looked for. The details were entered into individual case record form. Master sheet was compiled as per data in the case record form.

Statistical analysis was done by using descriptive and inferential statistics using Chi-square test with p-value less than 0.05 was considered as significant.

RESULTS

Out of the total 400 multiparous women in the study, majority, i.e., 247 (62%) belonged to the 26-34 years of age group, while only 210 (52.5%) participants were booked cases. As much as 307 (76.8%) were primi-para, and 258 (64.5%) were between 37.1 to 40 weeks of gestation. Out of all the participants, 365 (91.25%) multiparous women underwent an emergency caesarean section. (Table 1)

There were various indications of caesarean section in multiparous women. Most common indication of primary caesarean section in parous women is fetal distress in 122 (30.5%) women, followed by failure of induction in 54 (13.5%) women. (Figure 1)

There was no maternal mortality during study period but PPH was found in 41 (10.3%) women, which was the most common maternal morbidity followed by fever in 24 (6%). (Figure 2).

The study found mortality in 6 (1.44%), and 410 (98.56%) live births. Out of the 410 live births, 6% had an Apgar score of 4 to 6. Majority, i.e., 223 (53.6%) had a birth weight from 2.6 to 3.5 kg. As much as 45 (11%) fetuses required NICU admission and the most common indication for NICU admission was birth asphyxia (33%) followed by preterm care (25%). (Table 2)

We studied association of maternal outcome with booking status of multiparous women. Out of various maternal outcomes, prolonged intensive care was statistically significant with booking status ($p < 0.05$) (Table 3)

We found statistically significant association between birth weight of baby and gestational age with prolonged neonatal intensive care ($p < 0.05$) (Table 4).

DISCUSSION

In the present study, total deliveries during study period were 6957, out of which 3878 (55.75%) subjects underwent Caesarean section. The number of primigravida undergoing Caesarean section was 1201 (31%), 837 (21.6%) underwent repeat Caesarean section, followed by Caesarean section in 379 (9.8%) nulliparous multigravida and frequency of primary Caesarean sections in multiparous subjects was 21 % of all deliveries and 37.7 % of all Caesarean sections. Other studies reported caesarean section rates in multiparous subjects as follows: 3.82% (Dr. J.K. Saluja et al)⁸, 6.04% (Rupal Samal et al)⁷, 7% (Dr. P. Himabindu et al)⁸, 7.68% (Dr. G. Partha Saradhi Reddy et al)⁹, 29.05% (Erika Desai et al)¹⁰.

The current study participants belonged to the age group of 26-34 years (62%). Studies by G. Partha Saradhi Reddy et al⁹, Jyothi H Rao et al¹¹ and Sethi Pruthwiraj et al¹² which showed 45.18%, 41.5%, 41% were in age group of 26-30 years, respectively.

In this study, 52.5 % of subjects were booked as compared to 47.5% that were unbooked. Rupal Samal et al⁷ study had 97.1% of booked subjects & 2.9% unbooked. The study by Dr. P. Himabindu et al⁸ found 29% of subjects booked & 71% unbooked.

In the present study, 76.8 % subjects were of parity 1, followed by 19.8% of parity 2, 3% with parity 3, and only 0.5 % as parity 4. In a study conducted by Erika Desai et al¹⁰ 34.88 % were of parity 1, followed by 23.26 % as 2 and 3 parity each. In Dr.J.K. Saluja et al⁸ study, 68 % were parity 2. In the present study 91.25 % had Emergency LSCS. This correlates with the study by Sethi Pruthwiraj et al¹² which found 89.44% had Emergency LSCS.

The current study found hypertensive disorders, malposition, and premature rupture of membranes (PROM) as the most common high-risk factors. A study by Dr.G. Partha Saradhi Reddy et al⁹ had mentioned about associated medical complications such as anemia and pregnancy induced hypertension. Our study found that the most common indication for caesarean section was fetal distress in 32% cases, which is similar to the studies conducted by Rupal Samal et al⁷, Dr. P. Himabindu et al⁸, & Erika Desai et al¹⁰ with fetal distress as the most common indication for caesarean section in 44.1%, 24.7% & 25.58 % respectively.

Similar to this study, other studies reported no maternal mortality. It can be attributed to proper surgical techniques, use of prophylactic antibiotics, availability of blood transfusion facilities and access to an obstetric intensive care unit facility.

In the present study, out of the 416 babies, 94% babies had Apgar score >7 and in a study by P. Himabindu et al⁸ 81% babies had Apgar score. We found 53.6 % babies who had birth weight between 2.6 to 3.5 kg, which is slightly lesser than the studies conducted by Dr. P. Himabindu et al⁸ and Dr. J.K. Saluja et al⁸ that found that 75.8% & 60 % between 2.6-3.5 kg respectively.

In the present study, the neonatal mortality was 1.4% which is less than half of that reported by Dr. P. Himabindu et al⁸ where 3.7% neonates were reported as mortality. Lesser proportion of neonatal mortality in our set up could be because of proper management of antepartum complications, careful intrapartum monitoring, proper asepsis, skilled neonatologist, and effective neonatal intensive care. In present study, neonatal mortality was more in unbooked compared to booked subjects.

No significant association was found of booking status with maternal morbidity. None of the studies had mentioned this. It was not found to be statistically significant in the present study. In this study, the association of booking status and bad obstetric history with adverse neonatal outcome was also not significant. No studies have mentioned this association.

In the present study, association of prematurity, low birth weight with adverse neonatal outcome was statistically significant. Other studies have not reported this association.

Multiparous women undergoing a primary Caesarean section come under a high-risk pregnancy with the possibility of obstetric complications like extension of uterine incision, postpartum hemorrhage, and others in a significant number and hence this study concludes that multiparous women deserve the same attention during pregnancy and labour as that of primigravida and women with repeat caesarean section.

Table 1: Distribution of characteristics of multiparous women

Epidemiological factors	Frequency	Percentage
1. Age in years		
≤ 25 years	128	32
26 – 34 years	247	62
≥ 35 years	25	6
2. Booking History		
Booked	210	52.5
Un-booked	190	47.5
3. Parity		
1	307	76.8
2	79	19.8
3	12	3
4	2	0.5
4. Gestational age (weeks)		
30-34 weeks	26	6.5

34.1- 37 weeks	52	13
37.1- 40 weeks	258	64.5
>40 weeks	64	16
5. Type of LSCS		
Emergency	365	91.25
Elective	35	8.75

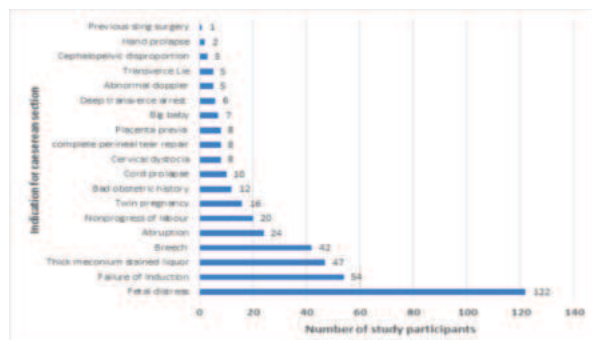


Figure 1: Indications of primary caesarean section in multiparous women

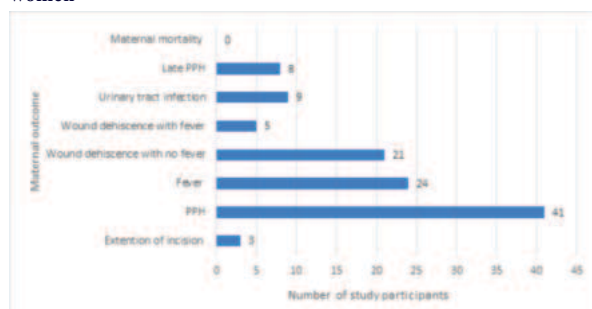


Figure 2: Maternal outcome

Table 2: Fetal outcome

Fetal outcome	Frequency	Percentage
1. APGAR score at 5 min		
0 to 3	0	0
4 to 6	25	6
7 to 10	391	94
2. Fate of the baby		
Discharged	410	98.56
Death	6	1.44
3. Birth weight distribution		
< 1.5 kg	11	2.6
1.5- 2.5 kg	145	34.8
2.6- 3.5 kg	223	53.6
>3.5 kg	37	8.9
4. Indications for NICU admission (n= 45)		
Preterm care	11	25
Respiratory distress	1	2
Birth asphyxia	15	33
Low birth weight	10	22
Meconium aspiration syndrome	8	18

Table 3: Association of maternal outcome with booking status

Table 3: Association of maternal booking status with maternal morbidity and neonatal outcome			
Booking history	Intraoperative/ immediate post-operative	Late Postoperative	p-value
Booked	19 (43.2)	34 (54.8)	0.496
Un-booked	25 (56.8)	28 (45.2)	
Total	44 (100.0)	62 (100.0)	
Booking history	Prolonged intensive care/mortality in neonate	No prolonged intensive care/ mortality in neonate	p-value
Booked	8 (32.0)	202 (53.9)	0.03
Unbooked	17 (68.0)	173 (46.1)	
Total	25 (100.0)	375 (100.0)	

Table 4: Association of foetal outcome with prolonged intensive care

	Prolonged intensive care/mortality		
Booking history	Present	Absent	p-value
Booked antenatal care	8 (32.0)	202 (53.9)	0.03
Unbooked antenatal care	17 (68.0)	173 (46.1)	
Total	25 (100.0)	375 (100.0)	
Gestational age ≤37 weeks	11 (44.0)	75 (19.2)	<0.05
Gestational age >37 weeks	14 (56.0)	316 (80.8)	
Total	25 (100.0)	391 (100.0)	
Weight of the baby			
Less than 1.5 kg	7 (28.0)	4 (1.0)	<0.05
1.5 to 2.5 kg	6 (24.0)	139 (35.5)	
2.6 to 3.5 kg	10 (40.0)	213 (54.5)	
More than 3.5 kg	2 (8.0)	35 (9.0)	

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