

Study of Primary Caesarean Section in Parous Women at a Tertiary Care Centre

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Abstract

Objective: To study the indications of primary caesarean section in parous women and to study the maternal and fetal outcome in these women.

Methods: All Parous women undergoing primary caesarean section beyond 28 weeks of gestation and fulfilling the inclusion and exclusion criteria were included in the study. After explaining the purpose of the study and taking written informed consent, data was collected.

Results: Majority of the study participants were in age group 21-25 years, from the rural area and belong lower/middle income group. Majority of the study participants were unbooked and underwent emergency LSCS under spinal anesthesia. Majority had spontaneous onset of labor. Fetal distress followed by antepartum haemorrhage were the most common indications of LSCS. Maternal complications were present in 8.3% of the study participants, PPH was the most common complication seen among mothers. Most common fetal complication was respiratory distress followed by birth asphyxia. 2.9 % of the babies had congenital anomalies. 15.6% of the babies required resuscitation and 16.8% of babies required NICU admission

Conclusion: This study emphasizes the need of regular antenatal checkups and institutional delivery of all women as prior uneventful vaginal birth does not guarantee a repeat successful vaginal delivery.

Keywords: Fetomaternal outcome, Antepartum haemorrhage LSCS, Maternal complications.

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Introduction

Caesarean section is the most performed surgical procedure in Obstetrics and can be life saving for mother, fetus or both. Primary caesarean section in parous women means caesarean section for the first time in women with previous one or more vaginal deliveries. Since many of these women had previous uneventful labor, a sense of false security prevails in them and they neglect antenatal care visits. As a result, these

women get expert supervision only if emergency arises during pregnancy or labor.

The frequency with which caesarean section is carried out continues to rise globally due to increased safety of procedure with better anaesthetic techniques and increased intervention in view of maternal and fetal wellbeing. Of

particular interest, considering increased incidence of caesarean delivery throughout the world is the validity of this procedure when used for the first time in the multipara. The most common indications in these women includes fetal distress, antepartum haemorrhage, abnormal presentation, and multiple gestation, obstructed labour and non-progress of labor. Although caesarean section can be life saving for mother, foetus or both, in certain cases evidence of concomitant increase in maternal and neonatal mortality and morbidity raises significantly.

Maternal complications include haemorrhage requiring hysterectomy or transfusion, uterine rupture, anaesthetic complications, shock, cardiac arrest, acute renal failure, venous thromboembolism, major infection or in hospital wound disruption. Complications increase the risk of newborn outcome includes increased admission to neonatal ICU, respiratory distress and perinatal death

The present study was undertaken to study the fetomaternal outcome in women undergoing primary caesarean section after vaginal birth and indications for the same.

Materials and Methods

In the present study titled Study of primary caesarean section in parous women at a tertiary care centre" conducted in the Department of Obstetrics and Gynaecology, Gandhi Medical College, Bhopal following materials and methods were used.

Study Design: Observational study.

Study Duration: 18 months (1st Jan 2021-30th June 2022).

Study Population: All parous women undergoing primary caesarean section at >28 weeks of gestation admitted in the Department of Obstetrics and Gynaecology, Gandhi Medical College, Bhopal.

Sample Size: All parous women undergoing primary caesarean section at >28 weeks period of gestation admitted in the Department of Obstetrics and Gynaecology, Gandhi Medical College, Bhopal during the period of data collection.

Inclusion Criteria:

- All Parous women undergoing primary caesarean section beyond 28 weeks period of gestation.
- Singleton pregnancy.
- Women who are willing to participate.

Exclusion Criteria:

- All women who had undergone prior uterine surgeries such as myomectomy, metroplasty or LSCS.
- Multiple pregnancy.
- Women who are unwilling to participate.

Method of data collection: Permission from the institutional ethical committee was obtained. All parous women undergoing primary caesarean section at >28 weeks of gestation reporting to the Department of Obstetrics and Gynaecology, Gandhi Medical College, Bhopal and willing to participate were included in the study.

The patients were provided with the study information sheet and consent form and were explained about the relevant details about the study in a language best understood by them. Informed written consent was obtained after explaining about the purpose, nature and process of the study and then data collection was started. All the data were collected with the help of pre structured peer reviewed proforma. The detailed history elicited from the patients including age, residential area, socioeconomic status, obstetric history, menstrual history, past and family history. Thorough general, systemic, and obstetric examination was done and relevant investigation including CBC, LFT, RFT, Urine microscopy and Ultrasound were done and risk factors if any were noted. Antenatal and intra- natal details were

noted. Maternal and fetal monitoring was performed according to standard guidelines. The indications of Caesarean section were noted. Maternal and fetal outcome in terms of morbidity and mortality were noted.

Maternal outcome was studied under-

- PPH
- Puerperal pyrexia
- Wound infection
- ICU admissions
- Maternal mortality

FETAL outcomes were studied under-

- Birth weight
- APGAR

- Congenital anomalies
- NICU admissions
- Mortality (including stillborn and perinatal mortality).

Data Analysis: Data was collected and entered simultaneously in statistical package for social sciences (SPSS) version 23 and coded appropriately. The data was analysed keeping in view the aims and objectives of the study. Descriptive statistics were calculated to summarize the sample characteristics in terms of frequency and percentage. Graphs and charts were. Analytical and inferential analysis was done.

Observation Chart

Table 1: Age Wise Distribution of Study Participants.

Age Group	Frequency	Percentage
< 20 years	87	13.4%
21-25 years	239	36.9%
26-30 years	188	29%
> 30 years	134	20.7%
Total	648	100 %

In our study, majority of the study participants were in age group 21-25 years (36.9%) followed by 29% in the age group of 26 - 30 years, 20.7% in the age group of >30 years and 13.4% in the age group of <20 years.

Table 2: Distribution of Patients According to Area of Residence

Address	Frequency	Percentage
Urban	187	28.9%
Rural	461	71.1%
Total	648	100%

In our study, 461(71.1%) of the study participants were from the rural area and 187(28.9%) resides in urban area.

Table 3: Distribution of Patients According to Socio-Economic Status

Socio-economic status	Frequency	Percentage
Upper	16	2.5%
Upper Middle	85	13.1%
Lower Middle	182	28.1%
Upper Lower	155	23.9%
Lower	210	32.4%
Total	648	100%

In our study, maximum of the study participants was from the lower class (32.4%) and lower middle class (28.1%). Only 2.5% of the study participants were from upper class and 13.1% from upper middle socio-economic status.

Table 4: Distribution of Patients According to Parity

Gravida	Frequency	Percentage
Para 1	330	50.9%
Para 2	161	24.8%
Para 3	85	13.1%
Para 4 or more	72	11.1%
Total	648	100%

In our study, majority of the patients were para 1 comprising 50.9%, followed by para 2 (24.8%) and least common was para 4 or more (11.1%).

Table 5: Distribution of Patients According to Indications of LSCS

	Indications of LSCS	Frequency	Percentage
1.	FETAL Distress	340	52.1%
2.	APH	123	19.0%
	a) Placenta Previa	72	11.1%
	b) Abruptio Placenta	51	7.9%
3.	Abnormal presentation	73	11.2%
	a) Breech presentation	56	8.6%
	b) face presentation	07	1.1%
	c) compound presentation	04	0.6%
	d) cord presentation	06	0.9%
4.	Transverse lie	37	5.7%
5.	Oblique lie	02	0.3%
6.	CPD	34	5.2%
7.	NPOL	29	4.4%
8.	Obstructed labour	7	1.1%
	Total	648	100%

Table 6: Distribution of patients according to Types of maternal complications

Types of maternal complications	Frequency	Percentage
ICU admissions	24	3.7%
PPH	15	2.3%
a) atonic PPH	11	1.6%
b) traumatic PPH	04	0.6%
Blood transfusion (>2.prc)	18	2.7 %
Puerperal pyrexia	11	1.6%
Wound infection	9	1.4%
Paralytic ileus	1	0.2%

Table 7: Distribution According to Fetal Outcome

Baby Status at Birth	Frequency	Percentage
Live birth	641	98.9%
stillbirth	7	1.1%
Total	648	100%

In our study, out of 648 babies 641(98.9%) of the babies were born alive and 7(1.1%) were still born.

Table 8: Distribution According to APGAR Score at 1min

APGAR Score (1 min)	Frequency	Percentage
0-3 Severely Depressed	12	1.9%
4-6 Moderately Depressed	88	13.6%
7-10 Normal	541	83.5%
Still born	7	1.1%
Total	648	100%

In this study, it was found that 100 (15.4%) babies had APGAR <7 and >83.5% of babies were born healthy with APGAR of 7-10.

Table 9: Distribution According to Type of Fetal Complication

FETAL Complications	Frequency	Percentage
Birth Asphyxia	27	4.2%
Respiratory Distress	61	9.4%
Septicaemia	8	1.2%
Shoulder Dislocation	2	0.3%
HIE	5	0.8%
Perinatal Death	13	2%

In our study, most common FETAL complication was respiratory distress seen in 61 babies (9.4%), followed by birth asphyxia seen in 27 babies (4.2%) and 13 babies (2%) had perinatal death.

Table 10: Distribution According to Admission to Nicu

NICU Admission	Frequency	Percentage
Yes	109	16.8%
No	532	82.1%
Total	641	98.9%

In this study, it was found that 109 (16.8%) babies required NICU admission.

Results

In present study majority of the study participants were in age group 21-25 years, from the rural area and belong lower/middle income group. Majority of the study participants were unbooked and underwent emergency LSCS under spinal anesthesia. Majority had spontaneous onset of labor. Fetal distress followed by antepartum haemorrhage were the most common indications of LSCS. Maternal complications were present in 8.3% of the study participants, PPH was the most common complication seen among mothers.

Still birth rate in present study was 1.1%, mean weight of the babies born was 2.91 kg \pm 0.40 kg. Most common fetal complication observed in present study was respiratory distress followed by birth asphyxia. 2.9 %

of the babies had congenital anomalies. 15.6% of the babies required resuscitation and 16.8% of babies required NICU admission

Statistical Analysis:

Data was collected and entered simultaneously in statistical package for social sciences (SPSS) version 23 and coded appropriately. The data was analyzed keeping in view the aims and objectives of the study. Descriptive statistics were calculated to summarize the sample characteristics in terms of frequency and percentage. Graphs and charts were. Analytical and inferential analysis was done.

Discussion

Age group: In our study, majority of the study participant were in the age group 21-

25 years (36.9%) followed by 29% in the age group of 26 - 30 years. This indicates that in our country, early marriage, and lack of contraception are quite prevalent and mainly responsible for repeated pregnancies. Also, maximum parity is seen during prime of reproductive years. Mandaliya M et al in their study also reported similar findings where author found out that maximum parity was observed in the age group of 20-30 years (40%). Somalwar et al in their study found out that maximum number of subjects undergoing primary caesarean section were in age group of 25-29 years (52.5%) which is comparable with our study. Rao et al reported in their study that around 41.5% parous women belonged to age group 25-29 years and 0.5% women were above 40 years age. Samal et al found out that mean age of parous women undergoing primary caesarean was 27 years and maximum incidence of caesarean section was seen in the age group of 21-30 years.

Area of Residence: In our study, 71.1% of the study participants were from the rural area and rest 28.9% resided in urban area. As our hospital is a tertiary care centre located in the centre of the city and receives referrals from many districts, we cater both urban and rural population.

Socioeconomic status: Socioeconomic status was classified according to modified Kuppaswamy scale. In our study, most of the study participants were from the lower middle (28.1%) and lower class (32.4%). Only 2.5% of the study participants were from upper class and 13.1% from upper middle. As study place is Government hospital, majority of the patients belonged to Upper lower and lower Class of Socio-economic Status. Also, it corroborates with the fact that 31.65% population in the state is still living below poverty line. Rajput et al in their study reported that majority (54.1%) were from upper lower class followed by 139 (36%) patients in lower class, 37 (9.6%) patients from lower middle class and only one (0.30%) patient

was found to be from upper middle class. Ajeet S et al also reported that in his study done on 247 patients, maximum patients (41.3%) were from class III socioeconomic class.

Antenatal Booking status: In our study, majority of the study participants were unbooked (65.6%) and only 34.4% were booked. As our hospital being tertiary care center and we have higher number of referred patients, unbooked patients were seen more commonly. This reveals poor level of antenatal services. Our study highlights the importance of antenatal care and caution in labour management. It also impresses the need for multipara to be at the hospital as soon as possible because many of them are inclined to try a home delivery and landup with complications. Somalwar et al, in their study reported similar findings where 24% were booked and 76% were unbooked. Most of the subjects were unbooked and had various preoperative complications (antepartum and intrapartum) which necessitated need for emergency caesarean sections. Saluja et al also reported that 24% were booked and 72% were unbooked in their study. In contrast to our findings, Mandaliya M et al in their study reported that majority of the patients were booked patients (85%), according to authors this is result of various government programs that have led to increase in awareness for routine antenatal care. Samal et al in their study also reported that 97.1% and 2.9% of booked and unbooked cases respectively.

Obstetric details: In our study, majority of the participants were para 1 comprising 50.9%, followed by para 2 (24.8%) and least common was para 4 or more (11.1%). According to Hangarga et al, majority of the cases belonged to the Gravida 2 and 3 (67.8%). Rajput et al in their study also reported that most of the patients (49.73%) were Gravida-2 followed by Gravida-3 (32.12%). According to Desai et al, among the patients undergoing C-section, the number of Primipara patients

were 30 (34.88%), number of 2nd para patients were 20 (23.26%), number of 3rd para patients were also 20 (23.26%), number of 4th para patients were 9 (10.47%), number of 5th para patients were 4 (4.65%) and number of 6th para patients were just 3 (3.49%).

Timing of Caesarean Section: Mandaliya M et al in their study reported that out of 1276 total cases, 809 (63.4%) had emergency LSCS and 467 (37.6%) had elective LSCS. Somalwar et al in their study reported that Emergency caesarean sections were done in 96.5% and most common preoperative complications that patients presented with were bad obstetric history, anaemia, Pregnancy Induced Hypertension (PIH) and PROM. According to Gupta et al, proportion of elective and emergency caesarean was 41.40 % and 58.60% respectively and author reported that Emergency C-section females showed all the complications significantly higher in terms of both maternal and FETAL outcome.

Indication of Caesarean section According to Mandaliya M et al, most common indication of primary caesarean section in parous women is FD (31%) followed by hypertensive disorders of pregnancy (22.1%). Desai E et al also reported fetal distress (25.58%), APH (22.09%), CPD (19.77%) and abnormal presentations (17.44%) as the most common indications for caesarean sections in his study. Mohan et al also reported fetal distress (24.7%) as the most common indication for Caesarean section in his study he also showed that most common abnormal presentation was breech for which caesarean section was done. Gupta et al and P Priyadarsene et al in their study also reported that fetal distress was the most common cause of caesarean section among parous women. In present study 625 participants (96.5%) underwent LSCS under spinal anaesthesia while 23 participants (3.5%) underwent LSCS under general anaesthesia. Maternal complications- Maternal complications

were more common with parity >2 and this association was also found to be statistically significant. Somalwar et al in their study found 13.5% and 16.5% of subjects having intraoperative and postoperative complications respectively. 12% of the subjects had PPH and 6% had fever. Author also reported that majority of the complications were observed in unbooked subjects. According to Mandaliya M et al, post operatively fever/wound infection was observed in 18% of cases. Desai et al reported that number of patients who had wound sepsis after C-section was 9 (10.47%), number of patients with abdominal distension was 12 (13.95%), number of patients having pyrexia was 10 (11.63%) and number of patients having U.T.I. was 2 (2.33%). The number of patients who got P.P.H. was 5 (5.81%) and the number of patients who developed psychosis which is rarely seen was just 1 (1.16%). There was no maternal mortality in our study. This may be due to the accessibility of antibiotics, blood transfusion services, safe anaesthesia techniques, prompt intervention, and improved surgical techniques and obstetrician skill. It can possibly be because there are good facilities for critically ill obstetric patients in the obstetric intensive care unit.

FETAL outcomes-In our study 98.9% of the babies were born alive and 1.1 % were stillborn. Mean weight of the babies born was 2.91 k± 0.40kg and 4.2% were low birth weight. Lower baby weight in our study could reflect poor maternal nutrition and antenatal care. FETAL complications were more common with the parity >2 but this association was not statistically significant. Mandaliya M et al in their study reported that 4.2% of the newborns were low birth weight, 15.4% had depressed Apgar (mostly among patients with obstructed labour), 16.8% required NICU admission, 9.4% had respiratory distress and 2% perinatal death was observed. Also, 10% of patients having severe

oligohydramnios turned out to have meconium-stained liquor. Somalwar et al in their study reported that 6.8% babies had Apgar score <7, 12.19% had low birth weight and neonatal mortality of 3.4%. Authors also reported that out of 200 subjects 50.5% had adverse obstetric outcome and 49.5% had good obstetric outcome. Samal et al in their study reported that 22.1% babies were admitted to NICU, only 5.1% babies had Apgar score <7 at 1 min, 26.5% neonates had LBW and there was no neonatal mortality. P Priyadarsene et al in their study reported that 22% of the babies were low birth weight, 37.7% had depressed Apgar, 49% were admitted to ICU, 10.7% had respiratory distress and perinatal death was 3.41%.

Conclusion

Multiparity is associated with high incidence of complication in antepartum, intrapartum and postpartum periods. Regular antenatal visits are not only identifying high risk factors but can also alleviate anxiety and give opportunity to counsel women and family about the importance of institutional delivery as timely intervention can reduce maternal and FETAL morbidity and mortality and improve maternal and FETAL outcome. Use of family planning methods is very low in our society for variety of reasons. This study emphasizes the need of regular antenatal checkups and institutional delivery of all women as prior uneventful vaginal birth does not guarantee a repeat successful vaginal delivery.

Limitations of The Study

It is a single centre study, with a small sample size so that results of study cannot be generalized. Because of lack of long term follow up in our study, future complications in mother and baby cannot be evaluated.

Declarations

Funding: None Conflicts of interest/Competing interests: None

Availability of data and material: Department of Obstetrics & Gynaecology, Gandhi Medical College, Bhopal. **Code availability:** Not applicable. **Consent to participate:** Consent taken **Ethical Consideration:** There are no ethical conflicts related to this study. **Consent for publication:** Consent taken.

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