Original Article

JCMCTA 2025 ; 36 (2) : 25-30
DOI: https://doi.org/10.3329/jcmcta.v36i2.86915

Primary Caesarean Section and Fetomaternal Outcome in Multigravid Women in Chittagong Medical College Hospital

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Abstract

Background: Caesarean Section (CS) rates are rising globally, including in multigravid women who previously delivered vaginally. Prior vaginal delivery often gives a false sense of security,leading to inadequate antenatal care and delayed recognition of complications, increasing maternal and neonatal risk. Proper monitoring, early detection and timely management can improve outcomes and reduce unnecessary CS. The purpose of the study to assess the fetomaternal outcome among these patients and to find out the measures to be taken for safe prevention of the primary cesarean delivery.

Materials and methods: A prospective observational study was conducted in the Department of Obstetrics & Gynaecology, Chittagong Medical College Hospital, from March 2023 to February 2024. A total of 89 multigravid women with previous vaginal delivery underwent elective or emergency CS. Data were collected using a structured proforma and analyzed descriptively.

Results: Out of 201 multigravida deliveries, 89 (44.3%) were primary CS. Most patients were 18–25 years (40.4%) rural (53.9%) and housewives (88.8%). Common risk factors were postdated pregnancy (23.6%) and pre-eclampsia (19.1%). Main indications included fetal distress (20.2%) malpresentation (16.9%) and severe pre-eclampsia/eclampsia (15.7%). Emergency CS accounted for 80.9%. Maternal morbidity occurred in 22.5% (Mainly wound infection 12.4%) while neonatal morbidity was 60.7%, chiefly birth asphyxia (34.8%) meconium aspiration (10.1%) and sepsis (7.9%). Stillbirths and neonatal death were 6.7% and 3.4% respectively.

Conclusion: Primary CS in multigravid women is common, mainly due to fetal distress and malpresentation and is associated with significant maternal and neonatal morbidity. Strengthening antenatal care and intrapartum monitoring could improve outcomes.

Key words: Fetomaternal outcome; Multigravida; Primary Caesarean Section.

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Submitted on : 31.08.2025
Accepted on : 20.12.2025

Introduction

The most frequent major operation for women nowadays is a caesarean section, which in some circumstances can save the mother, the newborn, or both of them.[1] An estimated 18.5 million caesarean section cases are performed annually.[2] Although advances in surgical and anaesthetic techniques have improved safety, CS still carries higher risks than uncomplicated vaginal delivery.[3] A further study linked the increase in caesarean sections to a shift in medical practice and came to the conclusion that while the general threshold for performing a caesarean section has decreased even though the indications have not changed much over time.[4-6] The variances in caesarean section rates are caused by a variety of variables, including practice culture, practice style, hospital environment, source of funding, patient preference, and socioeconomic level. A clinical practice guideline can lower the rate of cesarean sections without raising the risk of unfavorable outcomes.[7] High or rising rates of caesarean delivery do not necessarily reflect demand for surgical delivery.[8]

Multipara means those who had delivered once or more after the age of viability.[9] Primary caesarean section in a multipara refers to the initial caesarean section performed on patients who had at least one vaginal delivery. In multipara, the placenta and the fetus are primarily to blame for cesarean sections.[7]

Despite having delivered a full-term child vaginally before, Multipara may still have cephalopelvic disproportion. The size of the foetus and foetal head should be carefully measured because the foetus grows larger with multiparity.

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A pendulous abdomen and lumbar spine lordosis are favorable malpresentations in multiparous individuals, and in any event, it is typical for the head to not engage with the pelvis until labor begins.[4,10] A multipara who has earlier delivered vaginally may still require a caesarean section for safe delivery.[3]

The general public has the opinion that after a mother gives birth to her first kid or children vaginally, all of her following deliveries will also be normal. As a result, these multiparous mothers frequently skip their regular antenatal appointments.[7] It is for these reasons that attention has been directed to the indication for caesarean section in women who have previously delivered vaginally.[11] Caesarean sections are indicated by a number of factors, including severe pelvic contraction, different types of dystocia, a significant degree of placenta previa and severe preeclampsia and eclampsia.[12] Fetal distress, a poor Obstetric History (BOH) and a challenging vaginal birth during surgery are among the additional indicators. However, there has been a startling rise in the caesarean section rate globally as a result of many socioeconomic, ethical and medical- legal issues that go beyond obstetrics and medical factors to indicate the need for the procedure.[13]

This study was to know the incidence of primary Caesarean section in multigravidas, its indications, to assess the fetomaternal outcome among these patients and to find out the measures to be taken for safe prevention of the primary cesarean delivery.

Materials and methods

This prospective observational study was conducted in the Department of Obstetrics & Gynaecology, Chittagong Medical College Hospital, from March 2023 to February 2024. All multigravid women (>28 weeks gestation) with at least one prior vaginal delivery who underwent elective or emergency CS were included postoperatively upto discharge from hospital. Women with ruptured uterus or those unwilling to participate were excluded. Due to availability of data, a total of 89 sample was included for this study. All the study information was noted on a predesigned proforma.

Ethical approval was obtained from the institutional review board and informed consent was taken from all participants.

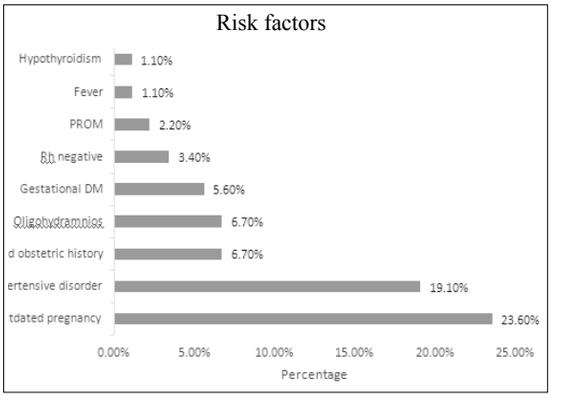
Results

In study period, out of 201 deliveries of multigravid women, primary caesarean section was 89 (44.27%)

Table I Socio-demographic and 0bstetric profile of the respondents (n=89)

Variables	Frequency (n)	Percentage (%)
Age group		
18-25 years	36	40.4
26-30 years	31	34.8
Above 30 years	22	24.7
Residence		
Rural	48	53.9
Urban	41	46.1
Education		
Illiterate	21	23.6
Below SSC	30	33.7
SSC	8	9
HSC	21	23.6
Graduation and above	9	10.1
Monthly family income		
<10000	11	12.4
10000-20000	46	51.7
20000-40000	25	28.1
Number of gravida		
2nd gravida	40	44.9
3rd gravida	29	32.6
4th gravida and above	20	22.5

Most of the respondents were from the 18-25 years age group (40.4%) were rural residents (53.9%) and housewives (88.8%). According to educational qualification, one third respondents had below SSC (33.7%) and half of the respondents had 10000- 20000 tk monthly family income. Nearly half (44.9%) were in their second pregnancy.



PROM=Premature Rupture of Membrane *Multiple responses were considered.

Figure 1 Risk factors of primary cesarean section among multi-gravid women (n=89)

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Most commonly found risk factor was post-dated pregnancy (23.6%) and pre-eclampsia (19.1%). Oligohydramnios (6.7%) bad obstetric history (6.7%) gestational diabetes mellitus (5.6%) Rh negative mother (3.4%) and PROM (2.2%) were also found. Again, fever, and hypothyroidism were found in 1 respondents respectively.

Table II Indication of caesarean section in multi-gravid women (n=89)

Variables	Frequency (n)	Percentage (%)
Fetal distress	18	20.2
Mal-presentation	15	16.9
● Breech	7	7.9
● Cord prolapse	1	1.1
● Transverse lie	4	4.5
● Oblique lie	3	3.4
Severe pre-eclampsia and antepartum eclampsia	14	15.7
Obstructed labor	13	14.6
Antepartum hemorrhage	13	14.6
● Placenta previa	10	11.2
● Abruptio placenta	3	3.4
Cephalopelvic disproportion	7	7.9
Oligohydramnios	3	3.4
IUGR	3	3.4
Chorioamnionitis	2	2.2
Twin pregnancy	1	1.1

IUGR=Intrauterine Growth Retardation.

The majority of the respondents had emergency cesarean section (80.9%) and 19.1% had elective CS. The main indications for CS were fetal distress (20.2%) malpresentation (16.9%) and severe pre-eclampsia/eclampsia (15.7%).

Table III Maternal and Neonatal Outcomes (n=89)

Outcomes	Frequency (n)	Percentage (%)
Maternal Morbidity	20	22.5
Abdominal distension	4	4.5
Pyrexia	3	3.4
Wound infection	11	12.4
PPH	2	2.2
Neonatal morbidities	54	60.7
Birth asphyxia	31	34.8
Sepsis and pyrexia	7	7.9
Meconium aspiration syndrome	9	10.1
Respiratory distress syndrome	1	1.1
Still birth	6	6.7
Neonatal death	3	3.4

PPH= Post-Partum Hemorrhage.

Post-operative morbidities were found in 20 respondents (22.5%) with wound infection being the most common (12.4%). Neonatal morbidities were found in 54 respondents (60.7%) with birth asphyxia being the most common complication (34.8%). The stillbirth and neonatal death rates were 6.7% and 3.4% respectively.

Table IV Distribution of fetal characteristics (n=89)

Variables	Frequency (n)	Percentage (%)
Gender of neonate		
Male	53	59.6
Female	36	40.4
APGAR score at 5th min		
>7	32	36
7 or less	57	64
Health of neonate at birth		
Healthy	70	78.7
Non-healthy	19	21.3
Neonatal weight		
<2500gm	25	28.1
≥2500gm	64	71.9
Mean neonatal weight (gm)	2878.65±725.43	

Majority of the neonates were male (59.6%) and rest were female (40.4%). Almost two- third of the respondents had APGAR score 7 or less than 7. 78.7% neonates were healthy at birth and 28.1% had neonatal weight less than 2500gm. The mean neonatal weight was 2878.65±725.43 gm.

Discussion

Caesarean section is one of the commonly performed surgical procedures in obstetrics and is certainly one of the oldest operations in surgery.[14] However, high rate of Caesarean deliveries was observed in primigravidas but not in multigravidas.[15] Though, primary CS in multigravida women has great importance. On this regard, this study was aimed to assess the primary caesarean section and fetomaternal outcome in multigravid women. The majority of respondents in this study were young adults aged 18-25 (40.4%), with a mean age of 27.59 years. Hangarga and Yattinamani had found in their study that majority of patients were from age group of 22 to 27 years (70%).[16] Interestingly, a significant proportion of the respondents were housewives, indicating the importance of exploring the healthcare needs and experiences of this demographic group. The predominance of respondents from rural areas (53.9%) suggested the necessity of targeted healthcare interventions

JCMCTA 2025 ; 36 (2) : 25-30
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in these regions. According to educational qualification, one third respondents had below SSC (33.7%) and half of the respondents had 10000-20000 tk monthly family income. Distribution of patients according to education showed that most of them were having primary education 179 (46.37%), though, patients shows majority (54.1%) were from upper lower class.[7]

The study identified post-dated baby and pre-eclampsia as the most common risk factors, emphasizing the need for vigilant prenatal care and monitoring to detect and manage these conditions. The presence of other risk factors, such as gestational diabetes mellitus, bad obstetric history and infectious diseases like dengue fever, highlights the multifaceted nature of maternal health in this study. Sailaja and Kavitha reported medical complications like Gestational diabetes was seen in 11.6% and pre-eclampsia was present in 9.5% as risk factors of primary CS in multigravida mother.[2]

The indications for cesarean section were diverse, with fetal distress and malpresentation being the most prevalent. According to indication of cesarean section of this study, majority of the respondents had fetal distress (20.2%) and malpresentation (16.9%). Among malpresentation, 7 respondents had breech presentation, 4 had transverse and 3 had oblique lie and 1 respondents had cord prolapse. Other indications such as severe pre-eclampsia and antepartum eclampsia (15.7%) obstructed labour (14.6%) antepartum haemorrhage (14.6%) cephalopelvic disproportion (7.9%) were commonly found. Among antepartum haemorrhage, 10 had placenta previa and 3 had abruptio placenta. However, 3 respondents had oligohydramnios, 2 respondents had chorioamnionitis, 2 respondents had IUGR and 1 respondent had twin pregnancy. Indication of primary CS in multigravida women in Kabbashi Mohammed Adam et al. study were 22.1% due to malpresentation, fetal distress 15% and prolonged first stage 13.4%, prolonged second stage 12.4% and antepartum haemorrhage 11.5%.[17] Most common indication for caesarean section in the parous woman was fetal distress 63 (40.64%) followed by breech and non-progress of labour 12 (7.74%) and then oligohydramnios in 11 (7.09%).[18]

Furthermore, emergency cesarean section (80.9%) was most commonly seen in this study, where rest 19.1% had elective CS. This was also agreed in another study showing out of 75 primary CS cases, 56(74.7%) underwent emergency CS whereas only 19 cases (25.3%) underwent elective CS.[19] The high percentage of emergency cesarean sections (80.9%) suggests the critical nature of many deliveries, further underscoring the importance of timely and decisive medical interventions.

Post-operative morbidities were observed in a notable number of cases, with wound infection being the most common complication. Post-operative morbidities were found in 20 respondents in this study. Among them, 11 respondents had wound infection, 4 respondents had abdominal distension, 3 respondents had pyrexia and 2 respondents had post-partum hemorrhage. In Kumar et al. 106 (41.89%) patients had different complications due to primary CS in multi gravid mothers and most common maternal complication was pyrexia in 24 (9.48%) patients followed by wound discharge in 18 (7.11%) patients, UTI in 12 (4.74%), fever with wound discharge in 14 (5.53%) patients and PPH in 8 (3.16%) patients.[20] Infections (8.4%, 7.53%) and atonic post-partum hemorrhage (6.2%, 5.1%) are the most common complications in primary cesarean sections.[21]

The neonatal outcomes revealed a higher prevalence of male infants, and nearly two- thirds of neonates had an APGAR score of 7 or less, indicating a need for close monitoring and prompt medical attention. However, 28.1% neonate had birth weight less than 2500gm in this study and the mean neonatal weight was 2878.65±725.43 gm. Majority of babies, weighed in the range of 2-3kgs (55%)[2] Neonatal morbidities, including birth asphyxia, sepsis and respiratory distress syndrome, were identified in a substantial number of cases. Neonatal morbidities were found in 54 out of 89 respondents in this study. Birth asphyxia most common neonatal complications (34.8%). Meconium Aspiration Syndrome, sepsis and pyrexia and respiratory distress syndrome were also seen. Furthermore, 6.7% were still birth and 3.4% had died as neonate. Chugh et al., presented the most common indication of PCS was found to be foetal distress (34.2%).[22] Also, Rajput et al.

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reported that the most common morbidity present in neonates was birth asphyxia in 4 (6.21%) neonates followed by RDS in 22 (5.69%) neonates, sepsis and pyrexia in 13 (3.36%) and MAS in 11 (2.84%) of neonates.[7] The study's documentation of stillbirths and neonatal deaths highlights the vulnerability of newborns in certain maternal and delivery conditions.

Limitations

The study was single-center, with a small purposive sample and descriptive analysis only, limiting generalizability.

Conclusion

This study evaluated the indication and feto-maternal outcome of primary caesarean section in multi-gravid women. The majority of the respondents had emergency caesarean section. Post-dated pregnancy and pre-eclampsia were the most common risk factors. Besides, the leading indicatios included fetal distress, pre-eclampsia with severe features and antepartum eclampsia, malpresentation, obstructed labour, placenta previa, and cephalopelvic disproportion. Notably, two-thirds of the neonates had APGAR score ?7. These results correspond with the findings of previous studies with slight variations. However, further study with larger sample size is recommended to corroborate my research findings.

Recommendations

- Should strengthen antenatal care and health education to ensure early detection of high-risk cases.
- Intrapartum monitoring (e.g. CTG, labour care guidelines) should be improved for timely intervention.
- Referral networks should be streamlined to reduce delays in emergency care.
- Conduct multicenter studies with larger samples to validate findings

Acknowledgement

All the authors express their gratitude to all concerned who assisted in this research project.

Contribution of authors

SSK-Acquisition of data, data analysis, drafting & final approval.

SB-conception, design, acquisition of data, interpretation of data, critical revision & final approval.

RA-Acquisition of data, data analysis, interpretation of data, critical revision & final approval.

MAKA-Data analysis, drafting & final approval.

SA-Conception, design, critical revision & final approval.

KNB-Conception, design, acquisition of data, data analysis, critical revision & final approval.

Disclosure

All the authors declared no conflict of interest.

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