

Original Article

STUDY ON INDICATIONS OF PRIMARY CAESAREAN SECTIONS IN A TERTIARY CARE CENTRE OF WEST BENGAL

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ABSTRACT

BACKGROUND: Caesarean section is the major obstetric surgery performed to save the mother and child for reducing the maternal and perinatal mortality. The rapid increase of global caesarean rate has become the most debated topic in modern obstetric care. The World Health Organization (WHO) recommended that the population-based c-section rate should be 5% to 15%. Unnecessary c-section may impose detrimental effect on maternal and perinatal outcome with inadvertent increase in maternal and neonatal mortality and morbidity.

AIMS AND OBJECTIVE: a) To find out the indications of c-section along with their obstetric determinants.

b) To identify factors needed to be addressed for strategies for improved MCH care.

MATERIALS AND METHODS: This observational study conducted at College of Medicine and JNM Hospital, Kalyani upon all patients undergoing caesarean section at this facility from June 2021 to April 2022. Patients with previous caesarean sections and C-sections on maternal requests were excluded from the study.

RESULTS: A total of 1716 caesarean sections were studied among which 505 cases were elective and 1211 cases were emergency. The percentage of primigravida women was significantly higher in emergency group (82%) than elective ones (64%). The most common indication of all caesarean sections being presumed fetal distress (28.61%) followed by failed induction (22.78%).

CONCLUSION: Caesarean section is considered as a process indicator in maternal health. There is a tremendous increase of population causing increasing caesarean rate globally. This causes burden to the general health system and may complicate maternal and child health. Obstetricians should cautiously take decision regarding c-section delivery. The government should also develop better health-care infrastructure and caesarean audit strategies to decrease preventable maternal as well as perinatal mortality.

KEY WORDS: Caesarean section, Indications, Elective, Emergency

INTRODUCTION

Caesarean section is the major obstetric surgery performed to save the mother and child for reducing the maternal and perinatal mortality. The rapid increase of global caesarean rate has become the most debated topic in modern obstetric care.^{1,2} The World Health Organization (WHO) recommended that the population-based c-section rate should be 5% to 15%³, to have an optimal impact^{4,5}. Unnecessary c-section may impose detrimental effect on maternal and perinatal outcome with inadvertent increase in maternal and neonatal mortality and morbidity.

AIMS AND OBJECTIVE

- a) To find out the indications of c-section along with their obstetric determinants.
- b) To identify factors needed to be addressed for strategies for improved MCH care.

MATERIALS AND METHODS

This observational study was conducted at College of Medicine and JNM Hospital, Kalyani upon all patients undergoing caesarean section at this facility. Patients with previous caesarean sections were excluded from the study. A total of 1716 women with primary caesarean sections were included in this study from June 2021 to May 2022.

Last 12 months CS Audit excel sheets collected

Sample size calculated taking account all C-sections done with exclusion of

- a) cases with previous C-sections
- b) Caesarean section on maternal request

Cases studied thoroughly to extract following data;

- a) Obstetric History

- b) Interval between decision for caesarean and delivery time
- c) Interval between admission and delivery time
- d) Indications of C-section

Monthly data put on a new excel sheet and annual data calculated from it

Data analysed and outcome measured with statistical diagrams

A detailed proforma was completed regarding the relevant information about registered or unregistered, elective or emergency caesarean section. Elective caesarean section was defined as those performed without emergencies, and the decision was made before the onset of labour.

	Patient 1	Patient 2	Patient 3
Name of the mother			
Institution booked/ Outside booked/ Private booked/ Unbooked			
Number of antenatal visits			
Gravida			
Parity			
Number of abortions			
Gestational age of ongoing pregnancy			
Date of admission in hospital			
Time of admission in hospital			
Whether patient is in labour on admission in labour			
Dilatation (in cms) of cervical os on admission in LR			
Interval between admission and CS (will calculate automatically in			

excel sheet)			
Whether post CS (yes/no)			
Whether repeat CS (yes/no)			
Emergency CS (yes/no)			
Interval between decision of C-section and delivery time			
Indications			
Whether oxytocin used for induction of labour? (yes/no)			
Whether oxytocin used for augmentation of labour? (yes/no)			
Was partograph used prior to make decision for CS? (yes/no)			
Whether CTG finding was used to take decision for CS? (yes/no)			

RESULTS

In our study, among 1716 cases more than half of the women (1211) undergone emergency caesarean sections (70%), while (505) patients undergone elective caesarean sections (29%).

The most commonly found indications for elective caesarean sections were induction failure (38%), pre-eclampsia (30%), IUGR (6.7%). Among all patients undergone elective caesarean sections, 64% patients were primigravida and 20% patients had history of previous abortions.

Among the patients undergone emergency caesarean sections, 82% patients were primigravida and most common indications being presumed foetal distress (45%), induction failure (16.5%), abnormal CTG (7.3%). This was because that most of unbooked women directly came in labour and showed abnormal foetal tracing.

Patients with multiple gestation undergone elective caesarean sections in 15% cases. All cases of multiple gestation were twin pregnancies except a single case of primigravid triplet pregnancy which undergone emergency

caesarean section. 80% patients with twin pregnancies were primigravida.

Most of the women had 99% and 96% caesarean section in singleton pregnancy in the elective and emergency groups, respectively, whereas 1% and 4% caesarean for multiple pregnancies in the elective and emergency groups, respectively. Reason for the difference of caesarean in multiple pregnancies was that most of the women came directly in labour in emergency. Malpresentation was the indication in caesarean section in 1.4% of cases in elective and 0.6% in emergency group.

There is no available evidence that elective c-section is safer than vaginal delivery. Most studies suggest that c-section has a much higher risk than labour. Obstetricians should promote vaginal delivery as the optimum mode of delivery¹².

Total (n=1716)	Primigravida	Multigravida
Elective C-section (505)	323	182
Emergency C-section (1211)	997	214

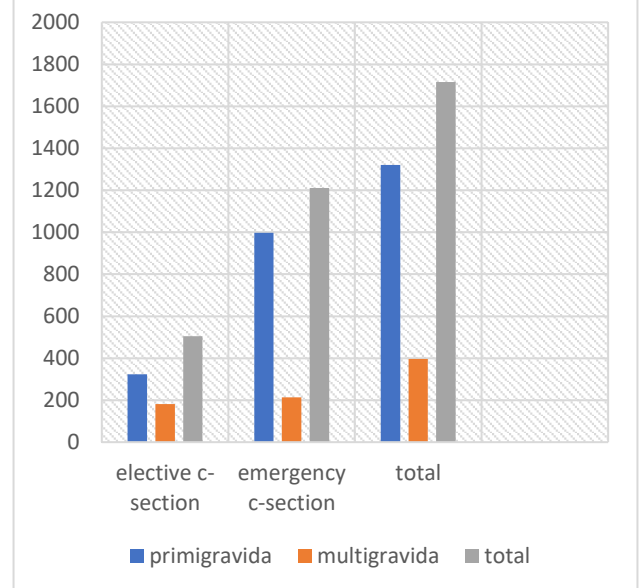


TABLE I. TOTAL NUMBER OF CAESAREAN SECTIONS AND OBSTETRIC STATUS OF PATIENTS UNDERGOING CAESAREAN SECTIONS

Indications	Number and Percentage of C-sections (including both primi and multi gravida)
Severe pre-eclampsia/impending eclampsia	183 (10.66%)
Presumed fetal distress	545 (28.61%)

Breech	70 (4.08%)
Induction failure	391 (22.78%)
IUGR	61 (3.55%)
Multifetal pregnancy	45 (2.62%)
Placenta previa	41 (2.39%)
abruption	20 (1.16%)
Post-dated pregnancy	45 (2.62%)
oligohydramnios	44 (2.56%)
CPD	68 (3.96%)
Unstable/transverse/oblique lie	16 (0.93%)
malpresentation	14 (0.81%)
Meconium-stained liquor	15 (0.87%)
Premature rupture of membrane	33 (1.92%)
Abnormal CTG	89 (5.19%)
Cord prolapse	6 (0.35%)
Non-progress of labour/ Deep Transverse Arrest/ Obstructed labour	30 (1.75%)

TABLE III. CAUSES OF PRIMARY CAESAREAN SECTIONS IN COM & JNMH, KALYANI (INCLUDING BOTH ELECTIVE AND EMERGENCY CAESAREAN SECTIONS)

Indications	Primigravida	Multigravida
Pre-eclampsia	100	53
Breech	20	10
Induction Failure	100	91
IUGR	30	4
Multifetal pregnancy	5	2
Placenta previa	1	1
Abruption	1	1
Post-dated pregnancy	34	3
Oligohydramnios	19	11
CPD	4	1
Unstable lie/ transverse lie	3	3
Malpresentation	5	2

TABLE IV. CAUSES OF ELECTIVE

CAESAREAN SECTIONS AMONG PRIMIGRAVIDA AND MULTIGRAVIDA

Indications	Primigravida	Multigravida
Severe pre-eclampsia/ impending eclampsia	18	12
Presumed foetal distress	425	120
Breech	32	8
Induction failure	194	6
IUGR	25	2
Multiple pregnancy	30	8
Placenta previa	36	3
Abruption	12	6
Post-dated pregnancy	6	2
Oligohydramnios	11	3
CPD	50	13
Unstable lie/transverse lie	6	4
malpresentation	6	1
MSL	9	6
PROM	30	3
Abnormal CTG	83	6
Cord prolapse	4	2
NPoL/DTA/Obstructed labour	21	9

TABLE V. CAUSES OF EMERGENCY CAESAREAN SECTIONS AMONG PRIMIGRAVIDA AND MULTIGRAVIDA

DISCUSSION

In our study among 1716 cases 1211 (70%) undergone emergency c-section while 505 (29%) cases undergone elective c-section. Among all cases undergone elective c-section 64% cases were primigravida and 20% cases had history of previous abortions while among those who undergone emergency c-section, 82% cases were primigravida. The most commonly found indications for elective c-section were induction failure (38%), pre-eclampsia (30%) IUGR (6.7%),

malpresentation (1.4%) while for emergency c-section most common indications were fetal distress (45%), induction failure (16.5%), abnormal CTG (7.3%), malpresentation (0.6%). In our study Most of the women had 99% and 96% caesarean section in singleton pregnancy in the elective and emergency groups, respectively, whereas 1% and 4% caesarean for multiple pregnancies in the elective and emergency groups, respectively. 80% patients with twin pregnancies were primigravida. And among all cases of multiple gestation 15% were undergone elective c-section.

Saraya Y S. et. al.⁶ in their study showed that among 506 cases of c-sections, 190 (95%) were singleton, 9 were twins and one was triplets. The most common primary indication was fetal distress (27.5%), NPoL (22.5%), breech (18%), failed induction (4.5%).

Panna LK, Mirza TT, Rahim R. et. al.⁷ showed in their study among 100 cases, more than 60% patients were primigravidae. The most common indications found to be fetal distress (31%), failed induction (13%), severe pre-eclampsia (7%), eclampsia (4%), CPD (9%), APH (8%), breech presentation (7%), obstructed labour (5%) etc. 79% cases were emergency c-sections and 31% elective c-sections.

Singh N., Pradeep Y., Jauhari S. et. al.⁸ showed in their study, among 150 women with c-section, 88 were elective c-sections and 62 were emergency c-sections. The percentage of primigravida was higher (77%) in emergency C-sections and percentage of multigravida was higher (60%) in elective c-sections. 94% in elective and 81% in emergency c-sections had singleton pregnancies. The most common indications for elective c-sections (except previous caesarean) being fetal distress (17%), malpresentations (13%). The main indications for emergency c-sections were fetal distress (62%). Females presented with fetal distress had 1.5 times more chances of elective c-sections. Induction failure cases had 3.2 times more chances of elective c-sections. Women with other indications like malpresentation, BOH, macrosomia, abnormal colour doppler had more chances of elective c-sections.

Dorji T., Dorji P., Gyamtsho S. et. al.⁹ in their study among 10,919 c-sections showed the rate of elective and emergency c-sections were 41%

and 58.8%. The most common indications (excluding post-cs cases) were fetal distress and non-reassuring CTG (14.3%), NPoL (13.2%), CPD (12%), oligohydramnios (9%), malpresentation (including breech) (8.8%), induction failure (8.7%), FGR (5.7%), pre-eclampsia/eclampsia/hypertension (4.6%). Pravina P., Ranjana R, Goel N.¹⁰ showed in their study showed among 812 c-sections, the major indications (excluding post-cs and on request cases) were fetal distress 31.15%, malpresentation 7.88%, induction failure 6.77%, NPoL 5.66%, decompensated heart disease 3.45%, severe pre-eclampsia/eclampsia 3%, CPD 1.72%, multiple pregnancies 1.47%.

LIMITATIONS OF THE STUDY

- a) Being a tertiary care centre, most of the patients undergoing caesarean sections in our institute were referred in cases. Hence, the result obtained could not be generalised to the overall population of West Bengal.
- b) Because of retrospective study design using existing records, some relevant information may be missing, resulting in information bias.

CONCLUSION

Caesarean section is considered as a process indicator in maternal health. There is a tremendous increase of population causing increasing caesarean rate globally. This causes burden to the general health system and may complicate maternal and child health. Obstetricians should cautiously take decision regarding c-section delivery. The government should also develop better health-care infrastructure and caesarean audit strategies to decrease preventable maternal as well as perinatal mortality.

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