

Analysis of Primary Cesarean Deliveries: An Audit of 708 Cases

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ABSTRACT

Objective To analyze frequency, indications, maternal and fetal outcome of primary cesarean section performed at a public sector tertiary care hospital.

Study design Retrospective observational.

Place & Duration of study Department of Obstetrics & Gynecology Unit 3, Civil Hospital Karachi, from July 2018 to June 2019.

Methodology Case files of primary cesarean section performed were reviewed. Study variables included age, gestational age, parity, booking status, indication of cesarean section, maternal and fetal outcome including complications. All data were entered and analysed on SPSS version 16.

Results During the study period 1589 cesarean sections were performed including 708 (44.5% %) primary cesarean deliveries. In the study population, the mean age of the patients was 26 ± 5.6 year and the mean gestational age 37 ± 2.5 weeks. Majority ($n=424-60\%$) of the patients were unbooked. In these patients 370 (52.3%) were primigravid, 198 (28%) multipara and 140 (18.2%) grand multipara. The most common indication was fetal compromise ($n=171-24.1\%$) followed by failure to progress ($n=151-21.3\%$), severe pre eclampsia and eclampsia ($n=126-17.7\%$) mal presentation ($n=119-16.8\%$) and APH ($n=87-12.4\%$). Maternal complications included wound infection ($n=79-11.1\%$), sepsis ($n=17-2.4\%$), PPH ($n=33-4.7\%$), paralytic ileus ($n=3-0.42\%$) and obstetric hysterectomy ($n=2-0.2\%$). Fetal mortality rate was 8.1% ($n=57$) and APGAR score of less than 7 was observed in ($n=229-32.4\%$) cases.

Conclusion A high rate of primary cesarean section was observed in this study with significant maternal morbidity.

Key words Primary cesarean section, Maternal morbidity, Perinatal mortality, Obstetric hysterectomy.

INTRODUCTION:

Cesarean section is a major obstetric procedure that can be life- saving for mother, fetus or both. Primary cesarean section is defined as the first cesarean delivery in a woman of any parity. Common

Indications for primary cesarean delivery are labor dystocia, non-reassuring fetal heart rate, cephalopelvic disproportion, eclampsia and severe pre-eclampsia, malpresentation, malposition, IUGR and antepartum haemorrhage.¹ A rising cesarean delivery is noticed especially in the last two decades. Factors associated with this rise in cesarean deliveries include an increase in high-risk pregnancies, increasing labor induction and a broader perspective of the safety of cesarean section.² Other reasons for the rise in cesarean section rate include better anaesthetic and operative techniques, delayed child bearing, maternal request, obstetrician fear, medicolegal issues, provision of antibiotics and better neonatal facilities. Singh et al in their study

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found high prevalence of caesarean deliveries in private sector as compared to public sector hospitals.³ similar findings of high caesarean in private facilities was noted by Boerme et al in their study.⁴

The decision of cesarean section is mostly individualized and depends upon the obstetrician attending the patient. According to WHO, cesarean section rates should be between 10-15%.⁵ In developing countries institutional deliveries is suggested as one of reasons for the high cesarean rate which could be due to the late referrals and non-booked status, resulting in complications.⁶ In a study, Zhang et al found that having a prior uterine scar was a major contributing factor of a high cesarean rate, accounting for 30.9% of all cesarean deliveries.⁷

Cesarean delivery rates are different in various parts of the the world, ranging from 0.4% to 40%, and since the last two decades a continuous rise in the cesarean rate has been observed.⁸ It is important to address the rising cesarean section rate through the evidence-based data and accountability of health care providers may be done. Majority of cesarean sections are performed as repeat cesarean section and trial of scar is associated with potential risk of scar dehiscence that requires more resources and extensive monitoring in labor. It is therefore stressed to reduce the primary cesarean section rate. This study was planned to analyze the frequency and indications of primary cesarean section and to determine associated maternal morbidity and mortality pattern. These observations may help in developing standard protocols and plan strategies that could reduce primary cesarean section rate.

METHODOLOGY:

This was an audit of the cesarean sections performed in the Department of Obstetrics & Gynecology unit 3 Civil Hospital Karachi, from July 2018 to June 2019. Total number of deliveries and cesarean sections performed was collected from case records of the hospital. Cases of primary cesarean deliveries were identified and further analyzed. Primary cesarean sections performed in patients of any age and parity were included.

Study variables included age, parity, gestational age, booking status, type (elective or emergency) and indication of cesarean section. Maternal outcome measures included intraoperative complications like blood loss, PPH, hysterectomy, blood transfusion, postoperative paralytic ileus, wound infection and sepsis. Fetal outcome measures included fresh stillbirth, neonatal death, APGAR score and NICU

admission. All information was collected on SPSS version 16 and analysed. Descriptive statistics were used for analysis. Frequency and percentage of categorical variables and mean and standard deviation of continuous variables were calculated.

RESULTS:

During the study period total number of deliveries handled was 4694 including 1589 (33.8%) cesarean sections. There were 708 (44.5%) primary cesarean sections performed. The mean age of patients was 26.31+5.64 year (from 17 years – 44 years) and mean gestational age of 37.25 + 2.59 weeks (from 28 weeks – 43 weeks).

In this study 370 (52.3%) cesarean sections were performed in primigravida. Others included multipara (n=198-28%) and grand multipara (n=140-19.8%). Majority of cases (n=670-94%) were performed in emergency. Only 71 (10%) of cases were decided by a senior consultant. Majority (n=424-60%) of patients were non booked. Indications of cesarean deliveries are shown in table I. The most common indication for the primary cesarean section was fetal compromise / distress (n=171- 24.1%%) followed by failure to progress (n=151- 21.3%%) The most frequent indication for emergency LSCS was fetal distress for emergency LSCS and malpresentation in elective cases.

Maternal morbidity encountered during primary cesarean delivery is shown in table II. In maternal outcome measures blood loss was < 500 in 112 cases, 500-1000 in 563 cases and > 1000 ml in 33 cases which included 30 emergency LSCS. Blood transfusion was required in 27 (3.8%) patients. Severe postpartum hemorrhage (PPH) was encountered in five patients (4 emergency cases and one elective case). One patient of emergency LSCS required obstetric hysterectomy due to intractable haemorrhage not responding to conservative measures. The average fetal weight was 2600 grams. The fetal outcome was good in 651(91.9%) cases and 51 (7.2%) and 6(0.8%) patients delivered fresh stillbirth (FSB) and macerated stillbirth (MSB) respectively. The cause of fetal mortality was not caesarean section, but due to fetal distress, antepartum haemorrhage, eclampsia and obstructed labour. APGAR score of less than seven was noted in 229 (32.4%) and majority of these were performed in emergency.

DISCUSSION:

Cesarean section can save the life of mother and fetus where vaginal birth carries a high risk of complications and death. There is a steady rise in

Table I: Indications of Primary Cesarean Section n= 708

Indication of LSCS	Number (n)	Percentage (%)
Fetal distress	171	24.1%
Failure to progress	151	21.3%
Severe Pre-eclampsia / Eclampsia	126	17.7%
Malpresentation	119	16.8%
APH	87	12.2%
Cord prolapse	10	1.4%
Multiple pregnancy	09	1.3%
IUGR	08	1.1%
Miscellaneous	27	3.8%

Table II: Morbidity Following Primary Cesarean Section

Morbidity	Number of Patients (n)	Percentage (%)
PPH	33	4.7%
Cesarean hysterectomy	02	0.28%
Wound infection	79	11.1%
Sepsis	17	2.4%
Paralytic Ileus	03	0.42%

LSCS worldwide which is of great concern due to the associated maternal morbidity and mortality. Primary cesarean delivery accounts for about 50% of total cesarean deliveries which is a significant proportion.⁹ The International health committee has considered 10-15% as an ideal primary cesarean births rate.¹⁰ In this study there were 708 primary cesarean section cases that account for 44.5% % of total cesarean sections. A study of 9002 cesarean sections reported, 52.9% primary cesarean sections cases and 47.51% repeat cesarean sections.¹¹ This is similar to our study. In this study 90 % cases were performed in an emergency situation where the decision was made by a junior consultant or senior resident. The lack of clinical expertise could result in an early decision of cesarean delivery in emergency cases.

In a study, the most frequent indication of cesarean section was non-reassuring CTG (32%) followed by labor arrest (18%).¹² In another study authors found failure to progress as most common indication of cesarean delivery.¹³ ACOG has recommended using 6cm as cut off value for active labor in order to reduce cesarean delivery rate. Allowing adequate time in second stage and encouraging operative vaginal delivery when appropriate, may help in reducing cesarean section rate.

In a national study researchers observed non-

progress of labor as most common indication for LSCS.¹⁴ In our study most common indication was fetal distress observed in 24.1 % patients. Fetal distress was diagnosed by non-reassuring CTG and meconium staining of amniotic fluid. There are chances of overdiagnosis of fetal distress since the facility of continuous CTG and fetal blood sampling is not available in our set up. Arrest of labor was second common indication in our study. In another study with high cesarean rate, predominantly non booked patients and fetal distress were the most common indications.¹⁵

Cesarean section is associated with short and long term maternal and perinatal morbidity which is more than vaginal birth. Studies have shown increased risk of haemorrhage and postpartum infection after cesarean delivery.^{16,17} In index study number of complications encountered in post-cesarean period were similar to that reported in literature.

CONCLUSION:

Cesarean delivery is associated with risk of major complications. A large number of patients were un booked. Trial of scar with previous cesarean section has a potential risk of rupture during subsequent pregnancy. Lack of facilities like continuous CTG and fetal blood sampling, appropriate decision in emergency situation were important. Involvement of senior person in making

decision of cesarean delivery may help to reduce cesarean delivery rate.

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Author's Contributions:

Farah Deeba Nasrullah: Conceived idea, data collection and manuscript writing.

Gulfishan Haq: Final approval of manuscript.

Saima Shaikh: Data collection, data analysis and final approval.

Shagufta mubeen: Data collection and final approval.

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