

A Study on the Trend of Caesarean Section in Regional Institute of Medical Sciences

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ABSTRACT

Imphal.

Methods: A prospective cross-sectional study was conducted among 500 patients who underwent Caesarean delivery starting from October 2013 for a period of 18 months till August 2015. All caesarean delivery cases above the age of 18 were included. A comparative study was made with a previous study conducted by Uttam Kumar Kharka titled 'The Changing Trend of Caesarean Section in Obstetric Practice' in RIMS, Imphal in the year 2010. Also, the indications for Caesarean Section along with the maternal and foetal outcome for all the patients was followed up and documented.

Results: The total number of deliveries during the period was 18181 out of which 6363 patients underwent Caesarean Section. The mean age of the women undergoing Caesarean Section was 29.3 years and most common among Hindu patients with middle socio economic class. It was also most common in the second gravida with term pregnancy. Elective Caesarean Section was done in 345 of the cases and emergency caesarean sections in 155 of the cases. The most common cause of Caesarean Section was Post Caesarean Section patients with cephalopelvic disproportion. Out of all the babies delivered, 8 were admitted in Neonatal Intensive Care with no neonatal mortality.

Conclusion: There is an increase in the rate of caesarean section at 35% compared to 28% in 2010, the most common indication being post caesarean section with cephalopelvic disproportion with no maternal or neonatal mortality.

Keywords: Caesarean section, indication, mortality

INTRODUCTION

From the Oxford English Dictionary, the etymology of caesarean section derives from the Roman legal code, the lex Caesare. This law had its origins as the lex Regia from the eighth century BC and prescribed that a baby should be cut out from its mother's womb if she dies before giving birth. Similar terminology is evident in other languages, for example, in the German term Kaiserschnitt (Emperor's section). The derivation of Caesar and caesarean is from the Latin verb caedere 'to cut'. For caesarean section have risen dramatically over the last 30 years especially for women in the higher age groups. The increased rates have coincided with the enhanced safety of the operation as well as widespread application of ultrasound and electronic foetal monitoring. The most common indications accounting for this increase are dystocia, repeat caesarean, breech presentation, foetal distress and increase in the size of the baby.¹ Caesarean sections, when adequately indicated, can prevent poor obstetric outcomes and be life-saving procedures for both the mother and the fetus. However, at a time when the caesarean delivery rate has been rising globally, there is growing concern about unnecessary caesarean sections. Unnecessary caesarean sections can increase the risk of maternal morbidity, neonatal death and neonatal admission to an intensive care unit. At the same time, there is also concern that in developing countries in general and among the poorer sections of the populations in such countries in particular, caesarean sections are not always accessible, even when they are clearly indicated. There is no consensus on the "optimal" rate of Caesarean delivery at the population level. Although values between 5% and 15% of live births have been suggested, the basis on which these thresholds have been proposed is not clear. Some historical studies indicate that low maternal mortalities can be achieved when the caesarean delivery rate is far below 15% of live births. In the Netherlands, for example, maternal

mortality had fallen below 20 deaths per 100000 live births by 1950, when caesarean sections were associated with less than 2% of live births. The results of some ecological studies also indicate that rates above 15% may be associated with additional mortality. The World Health Organization (WHO) has suggested that a caesarean delivery rate of 15% should be taken as a threshold that should not be exceeded – rather than a target to be achieved. The lower threshold for an “acceptable” rate of Caesarean delivery has received much less attention than the upper threshold. Extremely low rates are indications that access to surgical care is poor and that, in consequence, women, foetuses and neonates are dying unnecessarily. As 1 to 2 % of all births are associated with conditions that require caesarean sections to save the mothers’

lives such as obstructed labour and complete placenta praevia – caesarean delivery rates of less than 1% or less than 2% are thought to reflect a real deficit in access to life-saving obstetric care and to be associated with excess maternal mortality. Rates of at least 5% are thought to be necessary to save the greatest numbers of both mothers and neonates, although there is little evidence to support such a cut-off. National rates of caesarean delivery can mask substantial within- country variation in the rates of such surgery. For example, urban rates are consistently found to be higher than rural rates and the rates for the poorest sections of the population often fall well below the national mean.² So, this study was undertaken to review the changing trend of caesarean section in obstetric practice and its impact on fetomaternal outcome.

MATERIALS AND METHODS

This prospective cross-sectional study was done in the Department of Obstetrics and Gynaecology, Regional Institute of Medical Sciences. The study was carried out for a period of 18 months with effect from October 2013. The study population was pregnancy cases undergoing caesarean delivery in the department of Obstetrics & Gynaecology, RIMS Hospital, Imphal during the study period. All Caesarean delivery cases above the age of 18 years (both elective and emergency) during the study period were included. Subjects who were unwilling to be part of the study will be excluded. Subjects who were in a critical condition and not in a position to give an interview were excluded from the study. A written informed consent was taken from the subjects willing to participate in the study and was screened for inclusion and exclusion criteria for the study. Detailed history of the patient was taken and examination of the cases were done and recorded. The investigations as listed in the proforma were advised and recorded. Details of operation, whether it was elective or emergency caesarean section, indication of caesarean section, time of operation, type of anaesthesia used and the surgeon who conducted the operation, all intra- operative findings and complications were all be noted. Apgar score of the baby was noted and recorded soon after birth. The mother was examined post delivery and the findings were recorded. Mothers and babies were followed up till discharge from the hospital. The indications for Caesarean section and the complications associated with it, maternal and foetal outcome was evaluated and compared with past studies. Current trends in indication, operative technique and attitude of the mother regarding the mode of delivery was studied and reviewed. Data were checked for consistency and accuracy and were entered in IBM SPSS version 16. Data were described in mean and percentages. Chi-square test and t-test were used for test of significance. p- value less than 0.05 was taken as significant.

RESULTS

The study included 500 pregnancy cases undergoing caesarean delivery in the department of Obstetrics & Gynaecology, RIMS Hospital, Imphal during October 2013 to August 2015

Table 1: Distribution of respondents by age

Age in years	Number	Percentage
20-25	174	34.8
26-30	130	26.0
31-35	131	26.2
>35	65	13.0
Total	500	100.0
Mean ± SD	29.3 ± 4.6	

Majority of the pregnant ladies were from the age group of 20-21 years followed by 31-30 years and 26-30 years. Mean age was 29.3 years with a standard deviation of 4.6 years as shown in table 1 and figure 1.

Table 2: Distribution of respondents by religion

Religion	Number	Percentage
Hindu	301	60.2
Muslim	126	25.2

Christian	73	14.6
Total	500	100.0

Table 3: Distribution of respondents by socio economic status

Socio economic status	Number	Percentage
Low	107	21.4
Medium	235	47.0
High	158	31.6
Total	500	100.0

Nearly half of the pregnant ladies undergoing caesarean section were of the middle socio economic class group followed by high SES as shown in table 3 and figure 3

Table 4: Distribution of respondents by gravida

Gravida	Number	Percentage
Primigravida	109	21.8
Multigravida(2)	193	38.6
Multigravida(3)	132	26.4
Multigravida(4)	45	9.0
Multigravida (>4)	21	4.2
Total	500	100.0

Second gravida was most common in pregnancies undergoing caesarean section followed by third gravida and primigravida as shown in table 4 and figure 4.

Table 5: Distribution of respondents by period of gestation

Period of gestation (weeks)	Number	Percentage
<37 weeks	23	4.6
37-40 weeks	393	78.6
>:40 weeks	84	16.8
Total	500	100.0

Table 6: Distribution of respondents by percentage of anaemia

Haemoglobin	Number	Percentage
Low (<11)	172	34.4
Normal	328	65.6
Total	500	100.0

Anaemia was present in 34.4% of the pregnancies

Table 7: Distribution of respondents by type of LSCS

Type of LSCS	Number	Percentage
Elective LSCS	345	69.0
Emergency LSCS	155	31.0
Total	500	100.0

Table 8: Distribution of respondents by indication for LSCS

Reason for LSCS	Number	Percentage
Post caesarean with cpd	194	38.8
CPD	65	13.0
APH	44	8.9
Placenta previa	43	8.6
Fetal distress	22	4.4

Severe oligohydramnios	22	4.4
Oblique lie	21	4.2
PIH	15	4.2
Post dated PROM	13	4.2
PIH with CPD	19	3.8
Post dated unfavorable cervix	16	3.2
Non progression of labour	11	2.2
Failed induction	8	1.6
Cord prolapse	6	1.2
Total	500	100.0

The commonest reason for LSCS was post caesarean section with CPD which accounted for

Table 9: Distribution of respondents by maternal complication

Maternal complication	Number	Percentage
No complication	467	93.4
Post partum haemorrhage	27	5.4
Post partum sepsis	4	0.8
Maternal death	2	0.4
Total	500	100.0

Table 10: Distribution of respondents by sex of the baby

Sex of the child	Number	Percentage
Male	306	61.2
Female	194	38.8
Total	500	100.0

Majority of the babies born were males which accounted for 61.2% of the cases as shown in table 10 and figure 9.

Table 11: Distribution of respondents by weight of the baby

Weight of the child in kg	Number	Percentage
<2.5 kg	22	4.4
2.5-3.9 kg	458	91.6
≥4 kg	20	4.0
Total	500	100.0

Majority of the babies born were of normal weight and few had low birth weight and few had macrosomia

Table 12: Distribution of respondents baby by apgar score at 5 minute

Apgar score at 5 minute	Number	Percentage
Low (<7/10)	19	3.8
Normal	481	96.2
Total	500	100.0

Apgar score at 5 minute was low in 3.8% of cases as shown in table 12 and figure 11.

Table 13: Distribution of respondent's baby by NICU admission

NICU admission	Number	Percentage
Yes	8	1.6
No	492	98.4
Total	500	100.0

Eight babies were admitted to NICU as shown in table 13 and figure 12.

Table 14: Distribution of respondent's baby by mortality

Mortality	Number	Percentage
Yes	0	0.0
No	500	100.0
Total	500	100.0

No neonatal mortality was observed in this study.

DISCUSSION

This study was conducted Department of Obstetrics and Gynaecology, Regional Institute of Medical Sciences (RIMS), Imphal among 500 pregnancy cases undergoing caesarean delivery. The commonest age group of the pregnant women was 20-25 years with a mean age of 29.3 years. Hindu was the most common religion and nearly half of them were from middle socio economic class.

In this study caesarean section was done mostly with pregnant ladies of second and third gravida. Pregnant women were mostly term pregnancy. More than two third cases had elective caesarean section in this study. But the study by Kaur J et al¹⁷ had more of emergency (52.31%) over elective (47.70%) caesarean sections. In the study by Gao Y et al¹⁶ also fetal indications contributed most to the caesarean rate.

In the present study, the commonest reason for caesarean section is post caesarean section with CPD (38.8%) followed by CPD (13%). The indications of caesarean section in order of frequency were previous caesarean section in 346 (56.3%) patients, followed by fetal distress in 108 (17.5%); failure to progress in 88 (14.3%), mal- presentation & PIH in 20 (3.2%) cases each, placenta praevia in 18 (2.93%); twin in 8 (1.3%) and placental abruption in 6 (0.9%) cases in a study by Rafique S et al¹¹. Similar finding was obtained by Geidam AD et al¹, Unnikrishnan B et al⁷ and Ebrashy AE et al¹⁰. In the study by elective (47.70%) caesarean sections. In the study by Gao Y et al¹⁶ also fetal indications contributed most to the caesarean rate.

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But in the study by Kaur J et al¹⁷ the commonest reasons for caesarean sections were fetal distress (30.77%) and repeat caesarean sections (29.23%). In the study by Gao Y et al¹⁶ also fetal indications contributed most to the caesarean rate.

Majority (69%) of the caesarean were elective LSCS in the present study. However, in the study conducted by Karim F et al⁸, elective caesarean section was done on 14.14% of the study population.

Maximum number of newborn has normal apgar score at 5 minutes in this study. This finding was in agreement with the findings of Baskett TF et al¹⁸.

In the present study, majority did not have any post cesarean complications. Only 5.4% had post partum hemorrhage. These findings were in agreement with the observations of Karlstrom A et al¹⁹. Maternal complication was present in 7% of cases in caesarean delivery in this study. Among this post partum haemorrhage was most frequently encountered. Maternal mortality was present in 2 cases (0.4%). Low apgar score was found in 3.8% of babies born and 8 babies (1.6%) were admitted to NICU. No neonatal mortality was observed in this study. This is in contrast to the findings of Mehta A et al³ where perinatal mortality rate in caesarean births increased significantly. This may be due to the fact that majority of the caesarean delivery in the present study was at term pregnancy. This finding was consistent with SRS data 2013 that Manipur is one of the best states in India with regards to Infant mortality. And also in the study by Wuttikonsammakit P et al² there was neonatal mortality of 20.5% but no maternal deaths.

In the present study, the total number of total deliveries is 18181 out of which 6363 patients underwent Caesarean Section which amounts to 35% of the total deliveries. As per the thesis study of Uttam Kumar Kharka titled 'The Changing Trend of Caesarean Section in Obstetric Practice' in 2010, the total number of caesarean deliveries was 28% of the total deliveries which indicates an increase in the total number of caesarean deliveries.

CONCLUSION

This study was conducted Department of Obstetrics and Gynaecology, Regional Institute of Medical Sciences (RIMS), Imphal among 500 pregnancy cases undergoing caesarean delivery. The commonest age group of the pregnant women was 20-25 years with a mean age of 29.3 years. Hindu was the most common religion and nearly half of them were from middle socio economic class.

In this study caesarean section was done mostly in second and third gravida and in term pregnancy. More than two third cases had elective caesarean section in this study. The commonest reason for caesarean section was post caesarean section with CPD (38.8%) followed by CPD (13%) in this study. Maximum number of newborn has normal apgar score at 5 minutes in this study. In the present study, very few had post cesarean complications. No neonatal mortality was

observed in this study.

In this study, as caesarean section was done mostly with pregnant ladies of second and third gravida and were mostly term pregnancy. More than two third cases had elective caesarean section in this study. But the study by Kaur J et al¹⁷ had more of emergency (52.31%) over elective (47.70%) caesarean sections. In the study by Gao Y et al¹⁶ also fetal indications contributed most to the caesarean rate.

In the present study, the commonest reason for caesarean section is post caesarean section with CPD (38.8%) followed by CPD (13%). The indications of caesarean section in order of frequency were previous caesarean section in 346 (56.3%) patients, followed by fetal distress in 108 (17.5%); failure to progress in 88 (14.3%), mal- presentation & PIH in 20 (3.2%) cases each, placenta praevia in 18 (2.93%); twin in 8 (1.3%) and placental abruption in 6 (0.9%) cases in a study by Rafique S et al¹¹. Similar finding was obtained by Geidam AD et al¹, Unnikrishnan B et al⁷ and Ebrashy AE et al¹⁰. In the study by Wagan F et al⁸, the main indication of caesarean section was previous caesarean section, dystocia, foetal distress, placenta praevia and breech presentation. But in the study by Kaur J et al¹⁷ the commonest reasons for caesarean sections were foetal distress (30.77%) and repeat caesarean sections (29.23%). In the study by Gao Y et al¹⁶ also fetal indications contributed most to the caesarean rate.

No neonatal mortality was observed in this study. This is in contrast to the findings of Mehta A et al³ where perinatal mortality rate in caesarean births increased significantly. This may be due to the fact that majority of the caesarean delivery in the present study was at term pregnancy.

Majority (69%) of the caesarean were elective LSCS in the present study. However, in the study conducted by Karim F et al⁸, elective caesarean section was done on 14.14% of the study population.

Maximum number of newborn has normal apgar score at 7 minutes in our study. This finding is in agreement with the findings of Ugwu GO et al¹⁸. In the present study, majority did not have any post cesarean complications. Only 5.4% had post partum hemorrhage. These findings were in agreement with the observations of Corral-Chávez M et al¹⁹.

Maternal complication was present in 7% of cases in caesarean delivery in this study. Among this post partum haemorrhage was most frequently encountered.. Maternal mortality was present in 2 cases (0.4%). Low apgar score was found in 3.8% of babies born and 8 babies (1.6%) were admitted to NICU. But there was no mortality. But in the study by Wuttikonsammakit P et al² there was neonatal mortality of 20.5% but no maternal deaths.

In the present study, the total number of total deliveries is 18181 out of which 6363 patients underwent Caesarean Section which amounts to 35% of the total deliveries which indicates an increase in the number of carsarean deliveries compared to the previous five years in which the percentage of caesarean delivery was 28%.

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