

Retrospective study of determinants of caesarean section in a tertiary referral hospital

Shivamurthy H M^{**}, Ashwini Konin^{*}, Sri Divya Choudhary^{*}, Madhav Gopal^{*}, Navroze M Jassawalla^{*}

^{**} Professor, ^{*}Postgraduates, Department of OBGY, JJMMC, Davanagere, Karnataka, INDIA.

Email: dr_shivamurthy2003@yahoo.com

Abstract

Background: Caesarean Section is the second commonest surgery done on women in India after tubectomy and have great impact on maternal and neonatal health. Increasing Caesarean rates have raised the need to study its influencing factors. The overall Caesarean section rate in our set up is about 31.26%. of which 45.68% were primary sections. **Objectives:** To analyse the various clinical and non-clinical influencing factors of Caesarean Section. **Materials and methods:** We did a retrospective study consisting of 200 cases of caesarean sections conducted in Chigateri General Hospital, attached to JJMMC, Davanagere during 2014. We analysed factors like age, Educational level, BMI, Parity, Co-morbidity, type of CS, Indications and fetal birth weight and Neonatal performance. Data was collected from the Hospital records. **Results:** In this study, 74.5% were unbooked, 74% were educated, 62.5% had more than normal BMI, 16.5% were associated with hypertensive disorders, 58% were primary and 42% were repeat sections. There were 86.5% emergency and 13.5% were elective CS. The commonest indications were not willing for VBAC (70%), fetal distress (52%) and CPD (19%). Majority of the fetal weight among the study group were more than 2.5kg. **Conclusions:** According to our study, higher educational level, unbooked status and BMI more than normal were the significant factors determining CS. Nearly three-fifth of the patient underwent primary CS. Being a tertiary and referral Hospital we had a very high Caesarean rates.

Keywords: Social factors, Caesarean section, Primary, Emergency.

*Address for Correspondence:

Dr. Shivamurthy H.M., Door No 4006/1, 6th cross 17th main, M C C “ B” Block, Behind Bapuji High School, Davanagere-577004, Karnataka, INDIA.

Email: dr_shivamurthy2003@yahoo.com

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INTRODUCTION

Caesarean delivery is defined as the birth of the fetus through incisions in the abdominal wall and the intact uterine wall. This definition does not include removal of the fetus from the abdominal cavity in case of abdominal pregnancy or in case of rupture uterus.¹ Caesarean Section is the second commonest surgery done on women in India after tubectomy and have great impact on maternal and neonatal health. In India we have variable

Caesarean rate ranging from 5% to nearly 40% depending on various factors. China has the highest C-section in the world, accounting for 46 percent. Caesarean section is the most common operation in the US, where 30 percent of all babies are born by this method.² Bearing in mind that in 1985 the World Health Organisation (WHO) stated: ‘There is no justification for any region to have CS rates higher than 10-15 percent’ we have made an attempt to study the determinants of increasing caesarean delivery.³ Increasing Caesarean rates have raised the need to study its influencing factors. One hand there is tendency to liberalise the indication for caesarean section as per the demand by the clients on the other hand there is concern about the rising caesarean rate. Over the years, other technical advances were made as cesarean delivery became a safer and more frequently performed surgical procedure.⁴ Birth by caesarean sections have started to increase globally. While nearly one in every two births in China are delivered by C-section, the rate is around two in five in Thailand and Vietnam and nearly one in five in India.⁵

MATERIALS AND METHODS

We did a retrospective study consisting of 200 cases of caesarean sections conducted in Chigateri General Hospital, attached to JJMMC, Davangere during 2014. We analysed factors like Booking status, Educational level, BMI, Co-morbidity, type of CS and Indications. The data was collected from the hospital records during the year 2014.

RESULTS

Table 1: Booking of Cases

Booking	Frequency	Percent
Booked	51	25.5
Unbooked	149	74.5
Total	200	100.0

Table 2: Educational status

Education	Frequency	Percent
HIGHER	17	8.5
Illiterate	52	26.0
SSLC	131	65.5
Total	200	100.0

Table 3: Showing BMI

BMI	Frequency	Percent
Normal	71	35.5
Obese	35	17.5
Overweight	90	45.0
Underweight	4	2.0
Total	200	100.0

Reference for weight Underweight-<18.5kg/m², Normal-18.5-24.9kg/m² Overweight-25-29.9 kg/m² Obese>=30kg/m²

Table 4: Showing Co Morbidities

Co-morbidities	Frequency	Percent
Anaemia eclampsia	4	2.0
Abruptio placenta	2	1.0
BOH	1	.5
Gest HYPERTENSION	12	6.0
HB s Ag Reactive	1	.5
Hypothyroidism	2	1.0
Imminent eclampsia	3	1.5
Moderate anaemia and eclampsia	7	3.5
Mild pe	7	3.5
No comorbidity.	127	63.5
Poly hydromnios	2	1.0
Prom	10	5.0
Severe anaemia eclampsia	2	1.0
Oligohydromnios	6	3.0
Severe p e	13	6.5
Vaginal stenosis	1	.5

Table 5: Showing Indications for Caesarean section

Indication	Frequency	Percent
Anaemia with Eclampsia	2	1.0
Abruptio Placenta	1	0.5
CDMR	9	4.5
Cord Prolapse	1	0.5
Deep Transverse Arrest	4	2.0
Failed Induction	2	1.0
Failure to Progress-Arrest Of Cervical Dilatation	1	0.5
Failure to Progress-Deflexed Head	1	0.5
Failure to Progress -Persistant Occipito Posterior	3	1.5
Fetal Distress	52	26.0
Low BPP	1	0.5
Major CPD	4	2.0
Face Mentoposterior	1	0.5
Minor degree CPD	15	7.5
Not Willing for VBAC	70	35.0
Placenta Praevia	2	1.0
Prev 2 LSCS	7	3.5
Prev LSCS+Breech	1	.5
Primi + Breech	8	4.0
Oligohydromnios	6	3.0
Severe PE	3	1.5
Threatened Scar Rupture	1	0.5
Transverse	3	1.5
Twin With Ist Twin By Breech	1	0.5
Vaginal Stenosis	1	0.5
Total	200	100.0

DISCUSSION

Despite guidelines issued by various obstetrical and gynaecological bodies to promote trial of labor for various conditions, the caesarean delivery rate has gone up steadily from 4.5% in 1965 to 17.9% in 1981, 23.5% in 1993.⁶ In our study nearly 74.5% of the subjects were unbooked which include the referred cases also. According to our study 66.8% patients who underwent caesarean section were unbooked cases. Most of the patients were referred in view of various risk factors like associated comorbidities, meconium stained amniotic fluid, failure to progress and other complications associated with labour. Farah Karim *et al*⁷ conducted a study regarding Trends and Determinants of Caesarean Section showed that 71.34% of the patients undergoing caesarean section were unbooked and referred. So much so most of our subjects belonged to rural area where the awareness and importance of booking and the facilities available is less among the general population. Un booking and referral to higher centers, when there is obstetrical complication pose it's inherent potential complication which adversely affect the foetal and maternal outcomes. This would draw the attention of the care providers to make it possible to stretch out the medical services to this sector of the community. In our study 75% of the subjects are literate indicating the

improving educational status which is a challenge for the policy makers to improve the maternal and foetal outcomes. Sancheetha Ghosh⁸ in their study showed that the most important socio-economic factors for the performance of caesarean section are mother's education and place of residence. In their study to determine the demand factors for caesarean section showed that women with no education had the demand factor of 3, those with secondary education had demand factor of 21 and those with higher education had demand factor of 35⁸. This is in partial agreement with our study where we had 75% of the patients who underwent section were educated secondary and above. This probably shows that the patients' intolerance to the process of delivery there is a provision of caesarean section on demand, in addition the obstetrician's stress factor for waiting too long, to assure normal delivery. About 62 % of the subjects had BMI more than normal suggesting the changing food habits among the general population. There BMI has negative impact on the Caesarean section in the form of time taken for section haemorrhage on the table and post operative wound morbidity like infection wound gaping and the need for blood transfusion. Fyfe *et al*⁹. found that out of 611 patients who underwent caesarean section, 42% women were with normal BMI and nearly 58% included overweight and obese women. It is comparable to our study where 43.2% were with normal BMI while overweight and obese together constituted 54.6%. In our study more than half (53.2%) of the patients underwent caesarean section between 39 weeks to 41 weeks, one third (31.6%) between 37 weeks to 39 weeks and rest after 41 weeks of gestation. It is mainly dependent on the time of admission and the onset of spontaneous labour. Among the 73 subjects with associated comorbidities hypertensive disorders of the pregnancy was most common which was present among 39 subjects. These comorbidities may themselves be the indication or adversely affect the procedure as per the need for blood transfusion post operative morbidity. The next common comorbidity was anaemia with eclampsia accounting for 9 subjects. These adversely affect the wound healing, also necessitates blood transfusion. more days of hospital stay. Fyfe *et al*⁹. reported that hypertensive disorders of pregnancy and gestational diabetes were the more common pregnancy complications. Our study showed the similar possibility where hypertensive disorders and anaemia with antepartum eclampsia were the most common pregnancy complications. According to Bailit *et al*⁰, despite there was increase in caesarean delivery over time, more women were low risk (probability of CD <10%) (43.2%-46.4%, P<.0001). In our study the commonest indication was for Foetal distress (26%) in general and for repeat section not willing for VBAC

(35%). This shows many cases have undergone primary section thus increasing the rate of section again. Unnikrishnan *et al*¹¹ conducted a study which showed that the most common indication among primiparous was fetal distress followed by breech presentation. And among multiparous and grand-multiparous patients previous caesarean followed by fetal distress being the commonest indications. Most common indications among primi according to our study were fetal distress and breech presentation. And among multiparous, commonest indications included not willing for VBAC and fetal distress. According to the study conducted by Barber *et al.*, non reassuring fetal status (32%) was the most common indication among the patients undergoing primary caesarean section. These studies also support our findings.

CONCLUSION

According to our study, higher educational level, unbooked status and BMI more than normal were the significant factors determining CS. Nearly three-fifth of the patient underwent primary CS. Being a tertiary and referral Hospital we had a very high Caesarean rates.

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