Original Article

Caesarean section rates in a rural tertiary care hospital in West Bengal

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Abstract

Introduction: Caesarean Section (CS) is one of the commonest surgeries performed all around the world. The proportion of delivery conducted by caesarean section has increased in recent times. According to the review commissioned by the World Health Organization (WHO), there is no additional benefits in terms of mortality amongst mother or new-born if the CS rate rises above 15% in a country. **Materials and Methods:** It is a secondary data review of all the CS surgery conducted at the College of Medicine and JNM Hospital, Kalyani. The last 5 years (January 2011 to December 2015) data were reviewed.. The caesarean rate was calculated as- (Total number of caesarean deliveries/ Total number of deliveries) × 100 The indications for caesarean section included fetal distress, multiple gestation, malpresentation, previous caesarean section, failed induction, failed progression (including failed forceps or vacuum extraction), cephalopelvic disproportion, maternal indications, and foetal indications. **Results:** A total of 37642 patients delivered during the study period. Of them, 11921 had undergone caesarean section. The caesarean section rate at the hospital comes to be around 32%. Demographic analysis shows maximum number of patients to be between 21-30 years (71.66%). 6174 patients (51.8%) were primi and 5747 patients (48.2%) were multipara. The commonest indication for C-section was foetal distress (33.2%) followed by post caesarean cases (25.3%). **Conclusion:** The rate of caesarean section is gradually increasing. As primary caesarean section usually determines the future obstetric course of a lady, efforts to reduce it is of prime importance. VBAC should be promoted to keep check on post caesarean rates.
Keywords: Caesarean Section, indications, rate, tertiary care hospital.

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INTRODUCTION

Caesarean Section (CS) is one of the commonest surgery performed all around the world. It is normally performed when a vaginal delivery would put the mother and baby's life at risk and thus has been regarded as a life saving surgery since it started. The surgery should only be performed when there is a valid reason to do so. Unfortunately, the proportion of delivery conducted by caesarean section has increased in recent times. It has reached the 'epidemic' proportion in some region of the world. According to the review commissioned by the World Health Organization (WHO) of the rate of Caesarean section surgery performed world-wide, there is no additional benefits in terms of mortality amongst mother or new-born if the CS rate rises above 15% in a country.[1] The upper limit of 15% as suggested by WHO in 1985 could be less valid in current scenario where a large proportion of the pregnancies occur in older age females. Changes in socio-demographic and economic profile of the society at large also contribute to the current scenario. However, recent studies have shown that there is no evidence of benefit for the health of mothers and

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babies in populations with values of CS rate above 15%.[2,3] The increasing trend of CS rates may indicate a trend towards a costlier medical delivery systems and lowered threshold of abnormality detection among the health care providers.[4] CS, being a major surgery is associated with increased risk of blood transfusion, hysterectomy and death as compared to a vaginal delivery.[5] Moreover, a uterine scar following CS increases the risk of uterine rupture, placenta accreta and placenta praevia in subsequent pregnancies.[6]

This study aims at analyzing the incidence and indications of caesarean section performed in a rural tertiary care hospital of West Bengal over a period of 6 years. This may help in adopting suitable measures to reduce the CS rate and the consequent problems.

MATERIALS AND METHODS

It is a secondary data review of all the CS surgery conducted at the College of Medicine and JNM Hospital, Kalyani. It is a tertiary care hospital receiving referred patients from neighbouring rural sub divisional hospitals, peripheral health centres and nursing homes. The last 5 years (January 2011 to December 2015) data were reviewed. Total caesarean deliveries were analyzed from the hospital records. Maternal data collected included the age, parity and indication of CS. The caesarean rate was calculated as- (Total number of caesareandeliveries/ Totalnumber of deliveries) × 100**.** The indications for caesarean section included fetal distress, multiple gestation, malpresentation, previous caesarean section, failed induction, failed progression (including failed forceps or vacuum extraction), cephalopelvic disproportion, maternal indications, and foetal indications. In our study, foetal distress includes foetal distress during labour, and abnormal umbilical artery Doppler study. Maternal indications include the maternal conditions predating the pregnancy that could complicate delivery like post myomectomy, complete perineal tear, and medical causes. Obstetric indications were placenta previa, placenta accreta, abruptio placentae, cord prolapse etc. Foetal indications included intrauterine growth restriction, prematurity, and congenital malformations in which vaginal delivery was not possible.

RESULTS

A total of 37642 patientsdelivered during the study period. Of them, 11921 had undergone caesarean section. The caesarean section rate at the hospital comes to be around 32%. Table 1 shows the year wise deliveries, caesarean section and caesarean section rates in the hospital from 2011to 2015.

Table 1: Deliveries conducted at COMJNMH during 2011-15

Year	Total Deliveries	Cesarean Section	Rate
2011	8072	2286	28.32%
2012	7573	1860	24.56%
2013	7029	2110	30.01%
2014	7564	2736	36.1%
2015	7404	2929	39.5%
Total	**37,642**	**11,921**	**31.67%**

Demographic analysis shows maximum number of patients to be between 21-30 years (71.66%). Those < 20 and between 31 -40 years were 17.91% and 10.41% respectively. 6174 patients (51.8%) were primi and 5747 patients (48.2%) were multipara (Table 2).

Table 2:

		Number of cases	Percentage
Age	<20 years	2136	17.91%
	21- 30 years	8543	71.66%
	31-40 years	1242	10.41%
Parity	Primi	6174	51.8%
	Multi	5747	48.2%

The commonest indication for C- section was foetal distress (33.2%) followed by post caesarean cases (25.3%) as shown in Table 3.

Table 3:

Indication	Number of cases	Percentage
Foetal Distress	3968	33.2%
Post Caesarean	3017	25.3%
Multiple Pregnancy	582	4.9%
Malpresentations	731	6.1%
Failed Induction	396	3.3%
Failed Progression	313	2.6%
Cephalopelvic Disproportion	172	1.4%
Foetal Indications	195	1.6%
Maternal Indications	1179	9.8%
Obstetric Indications	1368	11.47%

DISCUSSION

Worldwide there has been an increasing trend of caesarean section deliveries. Shamshad (Abotabad) reported caesarean section rate of 45.1% in 2007 and Haidar G *et al* (Pakistan) reported caesarean section rate as high as 67.7%. [7,8] The Caesarean Section rate in our hospital during study period was 31.66% and in 2015 it was highest at39.5 %.The high CS rate in our hospital may be due to the fact that this being a referral hospital gets a large number of complicated pregnancies. In general, the reasons for the increase in CS globally are multifaceted. Foetal distress, especially its detection by continuous electronic foetal monitoring, more liberal use of CS forbreech presentation, abdominal delivery of growth-retarded infant, delayed childbearing, increasing maternal body mass, multiple gestation, prematurity, and improved safety of CS are commonly cited causes of

increased CS rates in recent times.[9] Another reason for this may be consideration of "a lower threshold of abnormality", i.e., with foetal heart rate changes less severe or for a shorter duration or after a few hours of variation compared to the normal progress of labour to" while deciding to perform CS be on the safer side".[10,11] In the present study, the commonest indication for CS was foetal distress (33.2%) which is similar to findings of Barber EL *et al* and Liu S *et al*.[12,13] however, this is in contrast to findings by Choudhury *et al* and Santhanalakshmi *et al* where previous caesarean was the commonest indication.[14,15] The accurate method for establishment of foetal distress is to perform foetal scalp blood pH estimation but is not performed in our setup. The second commonest indication in our hospital was post caesarean cases accounting for 25.3% cases. The incidence of CS in previous CS case can be minimized by routine practice of a trial of labour of Vaginal Birth After Caesarean (VBAC). VBAC is less in our hospital due to details regarding previous CS mostly being not available, doubtful scar strength, greater number of complicated referral cases to deal with and shortage of trained personnel for continuous monitoring of such cases. McMahon *et al* noted that higher rates of maternal and foetal morbidity exist with VBAC as compared to elective caesarean.[16] However, few studies found that VBAC with a well defined protocol was found to safe for the mother and infant as a planned caesarean delivery and can be encouraged.[17,18] Obstetric indications constituted 11.47% of the indications. Our hospital being a referral centre has to deal with more number of such cases. In our setup, failed induction accounted for 3.3% of the indications. Singh *et al* concluded that though delivery interval was shortest with PGE1 tablet, the induction failure rate was 30%; while PGE2 gel showed an induction failure rate of 7% only.[19] Judicious use of oxytocics and maintenance of a partogram in cases of failure to progress will help reduce the rate of CS resulting from cases of failure of vaginal delivery to progress. In our institute there was 2.6% failed progression cases which is comparable to the findings of unnikrishnan B *et al*.[20]

CONCLUSION

The rate of caesarean section is gradually increasing. As primary caesarean section usually determines the future obstetric course of a lady, efforts to reduce it is of prime importance. VBAC should be promoted to keep check on post caesarean rates.

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