EVALUATION OF CAUSES OF INCREASING CESAREAN SECTION RATE IN A TERTIARY CARE HOSPITAL

Tallat Iftikhar[1], Um-e-Salma Rizvi[1], Lubna Ejaz[1]

ABSTRACT

Background: Increasing cesarean section rate is a global phenomenon. There has been public health concern for last three decades about increasing cesarean section rate (CSR). **Objective:** The objectives of current study are; to determine cesarean section rate and enlist various factors causing increase in cesarean section rate in a tertiary care hospital. **Patients and Methods:** This descriptive study was conducted in Gynaecology and Obstetrics Department, of Holy family hospital, Rawalpindi, from 1st. January to 31st December, 2008. Both booked and non booked patients for cesarean section were admitted through antenatal clinic and emergency department of this hospital. All the patients who underwent cesarean section were included in this study. Details on age, parity, antenatal care and indications for cesarean section were recorded on a proforma. **Results:** In our study, maternal age of the patients who had cesarean section ranged from 18 to 45 years. During this study total number of deliveries was 5941, normal vaginal deliveries were 3575 (60.1%), cesarean sections were 2026 (34%), assisted vaginal breech deliveries were 85 (1.43%) and instrumental deliveries were 255 (4.3%). Out of total number of deliveries, 3340 (56%) were booked patients and 2601 (44%) were non booked patients. In our study, it was observed that the most frequent indication for cesarean section was fetal distress 645 (32%), followed by repeat cesarean section 545 (27%). **Conclusion:** The CSR of 34% is higher in our study than the rate recommended by World Health Organization. The effective way to decrease the CSR is by proper antenatal evaluation, provision of continuous fetal monitoring to high risk cases, availability of senior obstetrician, and avoidance of unjustified inductions and promotion of vaginal breech delivery.

Key words: Cesarean section rate, fetal distress, Incidence

INTRODUCTION

Increase in cesarean section (CS) is a global phenomenon. In the last three decades it has been increasing at an alarming rate.[1,2] In 2001 the cesarean section rate (CSR) world wide was 29.1% in USA, 21.5% in England and 40% in Latin American countries.[3,4,5] Social, clinical, demographic characters can influence the CSR. These factors include maternal age, duration of pregnancy, previous scar, breech presentation and induction of labor.[6,7,8,9,10,11] A high CSR does not confer additional benefits but have resource implication for health services.[12] Wide variations in CSR exist between different regions and maternity centers. Cesarean section is the most common surgical procedure done in obstetrics and gynaecology. As it is not a benign procedure and is associated with increase perinatal and maternal mortality.[13] Additionally, children born by caesarean section have high risk of asthma. It should only be performed when circumstances distinctly require it to minimize the public health concern about increasing CSR. There is no consensus that what should be the ideal CSR, but World Health Organization (WHO) issued a consensus statement suggesting that there was no additional benefit associated with CSR above 10-15%.[14] It is stated that indication for cesarean section should be the focus of study that lead to increased rate.[15] This study was purposely conducted to find the CSR in Holy Family Hospital (HFH) and to determine the indications and factors leading to increase cesarean section rate. In this way we can take effective steps to reduce the rising CSR.

PATIENTS AND METHODS

This study was conducted in Gynaecology /Obstetrics department of Holy Family Hospital, Rawalpindi , Pakistan . All patients delivered in HFH through emergency and out patient department from 1st Jan 2008 to 31st Dec 2008 were included in this study. HFH is a tertiary care hospital affiliated with Rawalpindi Medical College. Majority of the patients were referred from nearby towns, villages, private clinic, dais, and lady health visitors (LHV). The referred cases were mostly complicated pregnancies with medical and obstetric problems. Most of the patients have already taken the trial of labour and babies were already compromised and

1. Holy Family Hospital, Rawalpindi

Correspondence: Dr. Tallat Iftikhar
Senior Registrar

Email: usrizvi_96@yahoo.com

distressed, that's why emergency lower segment cesarean sections were performed.

Patient demographic detail includes age, parity, duration of gestation, antenatal care, fetal and maternal condition at the time of admission. Fetal distress was diagnosed by meconium stained liquor, abnormal cardiotocography (CTG) pattern and poor biophysical profile (BPP). This diagnosis of fetal distress lacks standard clinical criteria.[16] CTG recording may be associated with false positive result and consequently high cesarean section rate. Fetal blood sampling for PH and correct interpretation of fetal heart rate decreases the CSR.[17]

Regarding parity of the patients primigravida were 661 (33%), multi gravida were 776 (38%) and grandmultigravida were 589 (29%). Out of total deliveries, 3340 (56%) were booked patients and 2601 (44%) were non booked patients. Out of cesarean sections emergency were 1540 (76%) and elective were 486 (24%). Among these patients 1398 (69%) were at gestational age of 37 to 40+ weeks, 405 (20%) patients were at 34 to 36 weeks, 182 (9%) were at 32 to 33 weeks and 41 (2%) were at 28 to 31 weeks. (Table: I)

Table I: Clinical information of Study subjects

Gravidity among C-Section (n=2026)		Gestational age among C-Section (n=2026)		History of previous C-Section among C-Sections (n=545)		Total Maternities (n=5941)		Mode of C-Section (n=2026)	
Gravida	Frequency	Age (in weeks)	Frequency	C-Section	Frequency	Booked	3340(56%)	Emergency	1540(76%)
Primigravida	661(33%)	37- 40+	1398(69%)	One	305(56%)				
Multigravida	776(38%)	34-36	405(20%)	Two	137(25%)	Non-Booked	2601(44%)	Elective	486(24%)
Grand Multigravida	589(29%)	32-33	182(9%)	Three	80(15%)				
		28-31	41(2%)	Four	23(4%)				

RESULTS

In our study maternal age of the patients who had cesarean section ranged from 18 to 45 years. During this study total number of deliveries were 5941, normal vaginal deliveries were 3575 (60.1%), assisted vaginal breech deliveries were 85 (1.43%), instrumental deliveries were 255 (4.3%) and cesarean sections were 2026 (34%).

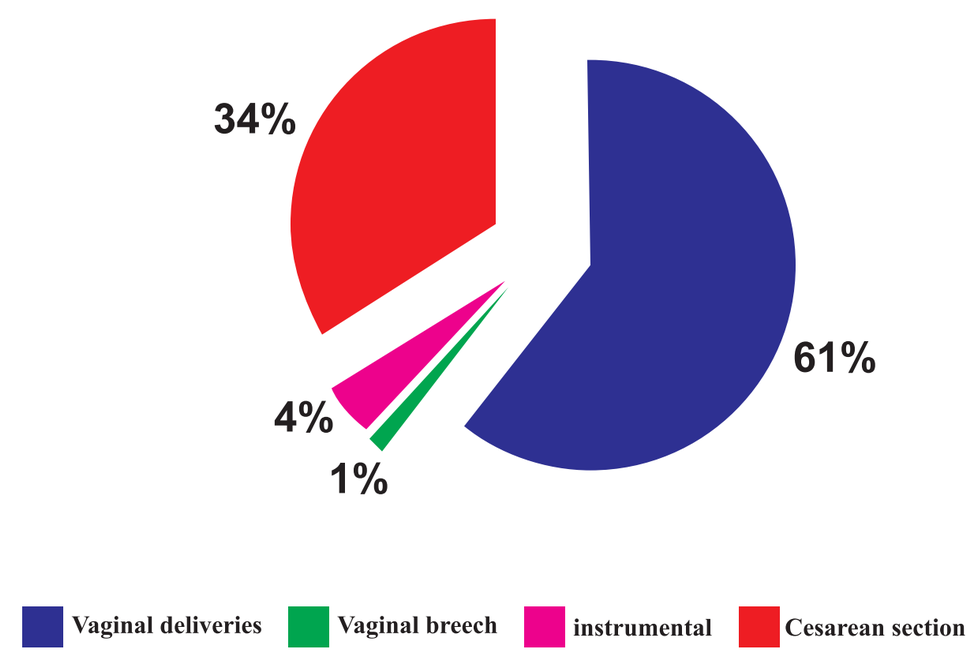

Figure I: Mode of deliveries

In our study it was documented that the most frequent indication for cesarean sections was fetal distress 645(32%), next common cause was repeat cesarean section 545 (27%).

Table II: Indications for Cesarean Sections

Indication	Frequency	%age
Fetal distress	645	32%
Repeat scar C-sec	545	27%
Failure to progress	270	13%
Failed induction	127	6%
Breech presentation	161	8%
Other mal presentation	27	1.33%
Ante Partum Haemorrhage	87	4.3%
Pregnancy induced hypertension\ Eclampsia	82	4%
Severe IUGR	82	4%
Total	**2026**	**99.63%**

Other common causes were failure to progres, breech and other malpresentations, ante partum hemorrhage, PIH, severe IUGR and failed induction.(Table:II)

DISCUSSION

Factors causing rise in cesarean section rate is a major problem all over the world. The CSR has increased from 5 to 7% in 1970 to 30% in year 2003.[18] Our study shows CSR of 34% which is quite higher than the rate suggested by WHO and other local studies.[19] The high rate is due to the reason that HFH is a tertiary care hospital and a significant number of the patients received in emergency are referred from the surrounding areas and periphery. Our study shows that the emergency CS is 76% as compare to elective CS of 24%. Decision of primary CS is very important.[20,21] Most cesarean sections are performed to benefit fetus not to mother. Some common indications for CS include fetal distress, prolonged labour, previous scar, pregnancy induced hypertension (PIH). Cesarean sections are performed for fetal distress and failure to progress without due respect to correct diagnosis and unbiased decision. Our study result shows that the most common cause of cesarean section is fetal distress. It favors the results from other studies.[22] Most of the referred patients received in emergency have already taken the trial of labour so the babies are already compromised and distressed; further trial is not possible in these cases that's why emergency section has to be performed immediately. The next cause of CS in our study was repeat CS. Previously vaginal birth after cesarean section was considered safe but now there is less enthusiasm for it. It is evident that CS is doctor friendly not patient. It is important to evaluate the indication of CS in primigravida because this not only increases the risk of cesarean section in ongoing pregnancy but also in the subsequent pregnancies. It is recommended that trial of scar in singleton pregnancy should be given in every patient after complete evaluation to reduce CSR as the risk of rupture is as low as 0.3%, even vaginal births in multipara after CS are not associated with increased complication.[23,24,25] But we have certain limitations in our set up; patients who are referred from periphery with previous one cesarean section are not good candidates for trial of scar. Reason being that most of the times surgeons doing their operations are not very experienced and moreover they don't have any documentation for indication of cesarean section and whether the incision given on uterus was classical or not, so this makes decision for trial of scar more risky. Other common causes evident from our study were failure to progress (13%) and failed induction (6%). Incorrect evaluation and induction of labour on unfavorable cervix results in increase chance of CS. Cervical dilatation is an important predictor of progress of labour. Maintenance of partogram, timely amniotomy and involvement of senior obstetrician can improve the outcome.[26] Active management decreases the chances of increase CSR but use of oxytocin without proper assessment may increase CSR.[27,28] Prolonged labour may result in obstructed labour, fetal distress and uterine rupture, partogram helps in timely intervention.[29,30] Malpresentation should be assessed properly, all cases of good size babies and cephalopelvic disproportion should be given careful trial of labour and elective cesarean for these indications should be avoided. All cases of CPD and good size babies should be evaluated properly.[31] Next common cause in our study was breech presentation that is 7.9%. In modern obstetrics CSR has increased due to elective CS for breech.[32] This trend not only affects the index pregnancy but also increases the chance of cesarean section in next pregnancy. We should adopt the policy of assisted breech delivery after complete evaluation of the patient. In addition external cephalic version (ECV) should also be considered in breech presentation. Placenta previa, transverse lie and cord prolapse are definite indications for cesarean section, vaginal delivery can not be offered in these cases. Hypertensive disorders and intrauterine growth retardation account for 4% each. In these cases if proper evaluation and good antenatal care is provided timely, CS can be avoided. Proper counseling and education of patients is also very important as CS has 8 folds higher mortality and 12 times higher morbidity in these patients.[33] In these cases risk benefit ratio should be assessed, CS without definite obstetric reason should be avoided.

CONCLUSION

The CSR of 34% is higher in our study then the rate recommended by WHO. The effective way to decrease the CSR is by proper antenatal evaluation,

provision of continuous fetal monitoring to high risk cases, availability of senior obstetrician, avoidance of unjustified inductions and promotion of vaginal breech delivery. We should practice the guidelines for indication of various cesarean sections, creating awareness for timely referral and minimal interventions to decrease CSR. It is expected that obstetrician should always provide prompt competence, skilled and evidence based services to women, these measures can decrease CSR and at the same time maternal and perinatal mortality can also be decreased.

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