Original Research Paper

Medical Science

ANALYSIS OF CESAREAN RATES WITH ROBSON'S CRITERIA

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ABSTRACT

OBJECTIVE: To analyse the cesarean rates with Robson criteria and assess the impact of various categories to overall cesarean rate.

MATERIALS AND METHODS: A prospective observational study over a 3 month period. Analysed using questionnaire.

RESULTS: Total deliveries in study period were 1552. 50.5% delivered by cesarean. 28.3% cesarean from group 5, 19.3% from group 1, 15.7% from group 10 making these the largest contributor to the cesarean rates.

CONCLUSION: The increasing primary cesarean rates are to be targeted to reduce overall rates. Cesarean rates are increasing exponentially world over which needs to be addressed to improve maternal and neonatal outcome and reduce associated morbidity.

KEYWORDS : Cesarean section, robson criteria, previous LSCS, breech

INTRODUCTION:

Cesarean section rates are on the rise worldwide. The rates were as low as 5% in 1940s which gradually increased to 155 in 1970s. Now with various factors like small family norm, high risk pregnancies, infertility, litigations the rates have increased to a whopping 30% in many countries. WHO however has set 15% as ideal cesarean rate and the current trend is in gross difference from this ideal situation. The analysis of cesarean is necessary to understand and take measures to reduce the incidence. Such analysis is difficult due to varied indications for cesarean. In order to have a standard system of classification, which is relevant and inclusive of all cesarean section, with ease and convenience of analysis, Robson's ten group classification was proposed[1]. This study aims to analyse the cesarean rates in a rural tertiary health centre using Robson's criteria with an aim to address the increasing rates of cesarean.

The Robson's classification includes

1	Nullipara singleton cephalic >37 weeks, spontaneous labour
2	Nullipara singleton cephalic >37 weeks, planned pre labour LSCS or induced
3	Multipara singleton cephalic >37 weeks, spontaneous labour
4	Multipara singleton cephalic >37 weeks, planned pre labour LSCS or induced
5	Multipara singleton cephalic previous cesarean
6	Nullipara singleton breech
7	Multipara singleton breech
8	All multiple pregnancies
9	Oblique or transverse presentation
10	Singleton cephalic preterm pregnancy <37wks

MATERIALS AND METHODS:

This prospective observational study was conducted over a three month period at Department of Obstetrics and Gynecology, Govt Theni Medical College. Study duration was 3months. All viable births during the study period were included. The information relevant to study like parity, number of fetuses, lie, mode of previous deliveries, onset of labour, indication for present cesarean were obtained using a questionnaire. Births occurring before 28 weeks of gestation, spontaneous or induced were excluded from the study.

RESULTS:

The total deliveries in this period was 1552. The results were analysed and tabulated as follows:

Table 1: Mode of deliveries (n-1552)

Mode of deliveries	Number of deliveries	Percentage
Labour natural	737	47.5%
Outlet forceps	14	0.9%
Vacuum	10	0.6%
Assisted Breech	8	0.5%
Cesarean	783	50.5%

Table 2: Parity (n-1552)

Parity	Number of deliveries	Percentage
Nulliparous	655	42.2%
Primiparous	121	7.8%
Multiparous	776	50%

Table 3: Parity and mode of delivery (n-1552)

	Labour natural	Assisted deliveries	Cesarean
Nulliparous	348	17	290
Primiparous	49	5	67
Multiparous	340	10	426

Table 4: Age and mode of delivery (n-1552)

	Labour natural	Assisted deliveries	Cesarean
<20 yrs	190	3	126
21-25 yrs	372	11	412
26-30 yrs	162	11	219
31-35 yrs	9	5	21
>35 yrs	4	2	5

Table 5: Gestational age at delivery (n-1552)

Gestational age	Number of deliveries	Percentage
$28\text{-}31^{+6}$ wks	21	1.3%
$32\text{-}33^{+6}$ wks	28	1.8%
$34\text{-}36^{+6}$ wks	174	11.3%
37-40 wks	1030	66.4%
>40 wks	299	19.2%

Table 6: Mode of onset of labour (n-1552)

Onset of labour	Number of deliveries	Percentage
Spontaneous	947	61.1%
Induced	449	28.9%
Prelabour	156	10%

Table 7: Robson criteria (n-1552)

Robson criteria	Total deliveries	Cesarean section	Total %	Cesarean rate%
1	389	180	25%	23.2%
2	232	120	15.2%	15.5%
3	250	48	16.2%	6.2%
4	167	60	10.8%	7.8%
5	222	220	14.3%	28.3%
6	31	27	2%	3.5%
7	9	6	0.5%	0.8%
8	23	17	1.4%	2.1%
9	6	6	0.3%	0.8%
10	223	92	14.3%	11.8%

Table 8: Indications for LSCS (n-783)

	CPD	Fetal distress	Oligohydramnios	Failed induction	Suspected scar dehiscence	Others
1	72	61	27			20
2	18	28	31	32		11
3		22	8			2
4		21	8	24		7
5	118	42			34	26
6	20	7				
7	4	2				
8						17
9						6
10		14	31	20	22	35
	232	197	105	76	56	124

Table 9: Neonatal outcome (n-1552)

Outcome	Number of deliveries	Percentage
IUD	31	1.9%
LBW (<2.5kg)	182	11.7%
IUGR	85	5.4%
NICU admission	210	13.5%
Neonatal mortality	20	1.2%

DISCUSSION:

There has been an increase in cesarean section rates. But this can be assessed not on the basis of rates, rather than whether it is needed or not. It is for this purpose there was a need to have a standard classification to analyse the relevance of rising cesarean rates. It is for this purpose the Robson classification has been established[1].

WHO and FIGO recommends Robson classification for assessment, monitoring and comparison of cesarean rates. It is a simple, objective, easily replicable classification. This system helps to classify cesarean rates based on five parameters such as obstetric history, onset of labour, fetal presentation, number of fetus, period of gestation.

Who recommended ideal cesarean section rate is 15%. But the present study has a section rate of 50.5%. This is similar to the cesarean rate of Scarella et al study showing 36.8% rate in Chile[2]. WHOMCS study reported 47.6% cesarean rate in China. Samba et al[3] study reported a 46.9% cesarean rate. This study showed that countries with HDI tend to have a higher cesarean rate over LDI countries. Also being a tertiary care centre accounts for this huge disparity from the ideal rate.

Of the entire cesarean, the major contributor was found to be group 5 with 28.3% and group 1 with 23.2%. However Aguiar et al[4] study found group 1 and 2 to account for 38.7%. According to this study, the major contributor is group 5 which is in accordance with other studies too. The increasing incidence of repeat sections is in turn supported by the high rate of primary sections. The fall in assisted deliveries, vaginal breech deliveries, cesarean delivery on maternal request, increased induction lead to rise in primary cesarean rates.

The group 1, 2 and 5 contributed to 67% of total cesarean deliveries in this study. Tahira et al[5] study found 33% contribution from group 5 similar to 28.3% rate in this study. Multiple studies have shown a rate of 60% or more from group 1, 2, 5 proving these groups to be the major determinant of cesarean rate[5,6].

There were only 2 successful vaginal birth after cesarean in this study period among term pregnancies. Increasing VBAC rate is difficult due to non availability of one to one care in a tertiary care setup. Hence the way to reduce this group will be by addressing the primary cesarean.

Overall group 1 contributes to 25% of total study sample and 23.2% of cesarean section rate. This is the group that needs to be addressed if any attempt is to be done to reduce the cesarean rates. Among group 1 deliveries, 40% were due to cephalo pelvic disproportion. This group includes pregnancies delivered before active labour in view of contracted pelvis, failed trial of labour, failure to progress. This proportion of cesarean section is unavoidable. 34% due to fetal distress is the group to be addressed. Proper interpretation of CTG, confirmatory tests to rule out fetal asphyxia, amnioinfusion to improve outcome in meconium stained fluid can reduce the cesarean rates and improve neonatal outcome.

Overall 25% cesarean deliveries are due to fetal distress and fetal alarm signal. Among those cesarean done for fetal distress, 20% babies required NICU admission (2.5% of total deliveries) and 2.5% babies expired. This is similar to WHO report which claims that cesarean section does not necessarily improve neonatal outcome. When properly interpreted and managed, most cases terminated for fetal distress had no features of asphyxia. Aguiar et al[4] study thus managed to reduce the cesarean rate of group 1 and 2 from 34.6% to 13.2%.

15.7% deliveries were preterm. This group has a high number because of associated co morbidities. These include severe preeclampsia in 22, abruption 10, placenta previa in 3 cesarean deliveries. Of the preterm cesarean, leading cause was oligohydramnios in about 25% cases. PPROM leading on to oligohydramnios was also included in this group. Only 35% cases could be given 4 doses of antenatal corticosteroids.

Although majority fell in late preterm group, 22% cases were from early preterm, and of this 40% required cesarean mostly due to co morbidities. This group had very poor neonatal survival and cesarean section was done primarily for maternal well being.

Another issue to be noted is induction of labour. 28.9% of total study group had induction of labour for multitude of reasons. Post datism in 52%, pre eclampsia in 25%, PROM and oligohydramnios in 19%, IUD in 4%. Of this only 10% cases required cesarean section for failed induction. Proper selection of cases and avoiding unwanted inductions can improve the success of induction of labour. Apart from this 12% cases required cesarean following induction in view of fetal distress. And 70% cases were successfully delivered vaginally.

CONCLUSION:

Robson ten group classification allows analysis, assessment and comparison of cesarean section rates and its impact on maternal and neonatal outcome. This study shows that majority of cesarean occurred in group 5, 1 and 2. Reducing primary cesarean goes a long way in reducing the incidence of cesarean sections.

REFERENCES:
1. Robson MS. Can we reduce the caesarean section rate? Best Pract Res Clin Obstet Gynaecol 2001. Feb;15(1):179-194 10.1053/beog.2000.0156
2. Medical audit using the Ten group classification system and its impact on the cesarean section rate. Scarella A, Chamy V, Sepulveda M, Belizan JM. Eur J Obstet Gynecol Reprod Biol, 2011; 154; 136-40
3. A review of cesarean sections using the ten group classification system (Robson classification) in Korle Bu Teaching Hopsital, Accra. Samba A, Mumuni K. Gynecol Obstet (Sunnyvale), 2016. Volume 6, Issue 6
4. Implementation of cesarean birth review using ten group Robson's classification and its immediate effects on rates of cesarean at university hospital. Aguiar R, Gaspar J, Reis Z. International congress, Brazil, 2015. P21
5. Analysis of cesarean section rate - according to Robson's 10 group classification. Tahira Kazmi, Sarva Saiseema A, Sultana Khan. Oman Med J, 2012, Sep; 27(5); 415-417
6. Brennan DJ, Robson MS, Murphy M, O'Herlihy C. Comparative analysis of international caesarean delivery rates using 10-group classification identifies significant variation in spontaneous labor. Am J Obstet Gynecol 2009;201(308):e301-e308