

Analysis Of Caesarean Section Rates According To Robson's Ten Group Classification System And Evaluating The Indications Within The Groups(At A Tertiary Care Hospital In West India).

Dr. Ami V. Mehta¹, Dr. Ishani Y. Patel², Dr. Vivek P. Dave³,
Dr. Aishwarya V. Gupta⁴

¹MD, DGO, Fetal Medicine fellow, Associate Professor, Department of Obstetrics & Gynecology, Smt. NHL Municipal Medical College, V.S. General Hospital, Ahmadabad.

²MBBS, 3rd Year Resident, Department of Obstetrics & Gynecology, Smt. NHL Municipal Medical College, V.S. General Hospital, Ahmadabad.

³MBBS, 2nd Year Resident, Department of Obstetrics & Gynecology, Smt. NHL Municipal Medical College, V.S. General Hospital, Ellis bridge, Ahmadabad.

⁴MBBS, 1st Year Resident, Department of Obstetrics & Gynecology, Smt. NHL Municipal Medical College, V.S. General Hospital, Ellis bridge, Ahmadabad

***Corresponding Author: Dr. Ami V. Mehta**

ABSTRACT

Background: Caesarean delivery is one of the most commonly performed operations today. As medical science and especially obstetrics has evolved over the recent years, there has been a parallel & steady increase in the rate of caesarean births.

Methods: This retrospective study was conducted at a tertiary care teaching hospital in Ahmadabad, India. All the women delivered from April 2017 to September 2017 in the labour ward were included & classified into 10 Robson's Classes & percentages were calculated for overall CS rate, contribution of groups & caesarean percentages in each group.

Results: The total number of women delivered during study period was 4785, out of which CS deliveries were 2008. Overall, CS rate calculated was 41.96%. The CS rates among various groups varied from 95.63 to 4.95%.

Conclusion: In the present study, repeat CS was the highest contribution to all caesarean sections performed. Most of the women with breech presentation & all the women with abnormal lies delivered by CS.

KEYWORDS:Caesarean Section, Robson Classification, TOLAC.

I. INTRODUCTION

From time when child birth was an event not necessitating medical attention, to the present time when concerns are voiced about high caesarean delivery rates, Obstetrics has for sure, travelled a long way. The caesarean section (CS) delivery rate in both developed & developing world over the past few decades is on an increasing trend.

In 1985 World Health Organization issued a statement in a meeting of reproductive health experts held at Fortaleza, Brazil that "there is no justification for caesarean delivery rate higher than 10-15%".

The lack of standardized internationally accepted classification system to monitor & compare CS rates in a consistent & action oriented manner is one of the factors preventing a better understanding of this trend and underlying causes. In 2011, a systemic review and critical appraisal of available classifications for CS concluded that women based classification in general and Robson's 10 Group Classification in particular, would be in the best position to fulfill current international & local needs. This classification would help understand the internal structure of these rates at individual health facilities & specific population groups.

II. AIMS & OBJECTIVES

- 1) To Analyses frequency and Indications for CS at tertiary care hospital.
- 2) To classify population in Robson's 10 group classification system & evaluate indications within the groups.
- 3) To identify the measures to reduce CS rates by formulating the plans in each group.

III. METHODS

This is a cross sectional study conducted at Smt. NHL Municipal Medical College, V.S. General Hospital in the state of Gujarat in Western India. All the women delivered from April 2017 to September 2017 were included. All relevant information (parity, gestational age, mode of previous CS and indications, etc) were entered into Microsoft Excel. Results were calculated at the end of this period.

Two classification systems were used in our study, one is Age-old Indication based Classification and another is Robson's ten group classification system.

Percentages were calculated for the overall CS rate, contribution made by each group to overall CS rate and percentage of CS in each group.

IV. RESULTS

A total number of women delivered during the study period was 4785. Out of which CS deliveries were 2008. Overall, CS rate calculated for V.S. General Hospital in this specified 6 months study period was 41.92%.

Table - 1 : Indications of CS

Indications	No. of cases classified(n=2008)	Percentages
Prev 1 CS with scar tenderness	608	31.22%
Prev 2 CS	232	11.91%
Fetal distress	404	20.74%
NPOL (non-progress of labor)	182	9.34%
Breech	91	4.67%
PIH (pregnancy induced hypertension) / eclampsia	58	2.97%
Obstructed labour	60	3.08%
Severe oligohydramnios/IUGR	28	1.43%
CPD (cephalopelvic disproportion)	184	9.45%
APH (ante partum hemorrhage)	32	1.64%
Multiple pregnancies	40	2.05%
Abnormal lies / compound presentations	28	1.43%
More than one Indications	61	3.03%
Total	2008	

Table 1 shows results of "Indication Based Classification". Results from this classification indicates that Scarred Uterus (43.14%) is the most frequent indication for caesarean deliveries followed by - Fetal distress (20.74%). Out of 2008 cases 1947 were classified as 61 cases were having more than one indications.

Table 2 : Robson's Classification

Robson's ten group classification		No. of CS over total no. of women in each group	Relative size of group (%)	CS rate in each group (%)	Contribution made by each group to overall CS rate (%)
1.	Nulliparous, single cephalic, > 37 weeks in spontaneous labor	464	(1024/4785) 21.40	(464/1024) 45.31	(464/4785) 9.69
2.	Nulliparous, single cephalic, >37 weeks, induced or CS before labor	100	(230/4785) 4.80	(100/230) 43.47	(100/4785) 2.08
3.	Multiparous (excluding previous CS), single cephalic, >37 weeks in spontaneous labor	97	(1958/4785) 41.48	(97/1958) 4.95	(97/4785) 2.02
4.	Multiparous (excluding prev CS), single cephalic >37 weeks, induced or CS before labor	34	(85/4785) 1.77	(34/85) 40	(34/4785) 0.71
5.	Previous CS, single cephalic, >37 weeks	1052	(1100/4785) 22.98	(1052/1100) 95.63	(1052/4785) 21.98
6.	All nulliparous breeches	57	(65/4785) 1.35	(57/65) 87.69	(57/4785) 1.19
7.	All multiparous breeches (including previous CS)	34	(45/4785) 0.94	(34/45) 75.75	(34/4785) 0.71
8.	All multiple pregnancies (including previous CS)	40	(100/4785) 2.08	(40/100) 40	(40/4785) 0.83
9.	All abnormal lies (including previous CS)	28	(28/4785) 0.58	(28/28) 100	(28/4785) 0.58
10.	All single cephalic, <36 weeks (including previous CS)	102	(150/4785) 3.13	(102/150) 68	(102/4785) 2.13

Analysis Of Caesarean Section Rates According To Robson's Ten Group Classification System And...

Table 2 shows results of Robson's classification (some percentages in this table do not add upto 100% because of rounding errors).

Results from Robson's Classification showing that the largest contribution among all deliveries was from Group-3 with size of 1958 (41.48%) during the study period of 6 months, but contribution made by each group to overall CS rate was highest in Group 5 (21.98%) followed by Group 1 (9.69%).

Table-3 shows Analysis of Robson's ten group classification along with indication sin each group for better understanding of CS rates.

Results from Table-3 showed that most frequent Indication for CS in Group-5 was scar tenderness 57.79% while in Group-1 most frequent indication was fetal distress 43.53% followed by NPOL 24.56% & CPD 16.37%.

In group-2 also most frequent indication for caesarean delivery was fetal distress 42%.

In all Nulliparous breeches commonest indication for caesarean delivery was apprehension for breech 87.71 %, whereas in Multiparous breeches Apprehension for breech is second common indication.

In women with multiple pregnancies, caesarean deliveries for unfavourable presentation were 92.50%, and caesarean section done for 2nd baby was 7.5%.

In group 10 which included all the women with singleton cephalic fetus at less than 36 weeks period of gestation, caesarean section rate was 68% with most common indication APH followed by PIH/Eclampsia.

Table 3 : Robson's ten group classification along with indications.

Robson's ten group classification	CS rate in each group (%)	Contribution made by each group to overall CS rate (%)	Indications in each group		
1	(464/1024) 45.31	(464/4785) 9.69	Fetal Distress NPOL CPD Severe oligohydramnios + IUGR Obstructed Labour	202/464 114/464 76/464 40/464 32/464	43.53% 24.56% 16.37% 8.62% 6.89%
2	(100/230) 43.47	(100/4785) 2.08	Fetal distress Induction failure + post date PIH/Eclampsia APH	42/100 29/100 23/100 6/100	42% 29% 23% 6%
3	(97/1958) 4.95	(97/4785) 2.02	NPOL + Induction failure Fetal distress Obstructed labour	48/97 26/97 23/97	49.48% 26% 23.71%
4	(34/85) 40	(34/4785) 0.71	Induction failure + post date PIH / Eclampsia APH	13/34 11/34 10/34	38.23% 32.35% 29.41%
5	(1052/1100) 95.63	(1052/4785) 21.98	Scar tenderness PROM Prev. 2 CS Fetal distress CPD PIH/Eclampsia Placenta Previa NPOL	608/1052 301/1052 232/1052 56/1052 42/1052 34/1052 29/1052 21/1052	57.79% 28.5% 22.05% 5.32% 3.99% 3.13% 2.75% 1.99%
6	(57/65) 87.69	(57/4785) 1.19	Apprehension for breech Fetal distress	50/57 7/57	87.71% 12.28%
7	(34/45) 75.75	(34/4785) 0.71	Prev. CS with scar tenderness Apprehension for breech Fetal distress severe oligohydramnios	20/34 8/34 4/34 2/34	58.82% 23.52% 11.76% 5.88%
8	(40/100) 40	(40/4785) 0.83	Unfavourable presentation CS for 2 nd baby	37/40 3/40	92.50% 7.5%
9	(28/28) 100	(28/4785) 0.58	Abnormal LIC	28/28	100%
10	(102/150) 68	(102/4785) 2.13	APH PIH/Eclampsia Severe Oligohydramnios PROM	53/102 30/102 10/102 9/102	51.96% 29.41% 9.80% 8.82%

IV. DISCUSSION

In present study, rate of caesarean is 41.92%, which is much higher than WHO recommended rate (10-15%). In this study higher rate suggests the hospital CS rate & not the population CS rate. However our rate could not be compared with the national rate as recent data about Indian C-Section rate are not available.

This high caesarean section rate can be explained by the fact that in a tertiary care hospital there are multiple facilities, like blood transfusion, 24 hours emergency operations theatre and good NICU. So that a fairly good numbers of high risk patients are referred and treated. In present time early detection of potential complications also contributes for increasing CS rates.

In all the classifications, major contribution for CS was the previous CS category (Group 5), some women offered TOLAC but only few underwent trial of labour & most of them ended with caesarean section. So in this group counselling & preparedness for TOLAC may be the most important measure to decrease caesarean section rate. In order to reduce CS rate we have to reduce primary CS rates.

In group 1 & group 2 the most frequent indications for C-section were fetal distress and non progress of labour, for this we have to improve the documentation of non-assuring fetal heart rate, resuscitative measures like maternal repositioning, oxygen supplementation, etc. & partogram, proper analysis of all records may help us in reduction in CS rate in these two groups.

Similar to other studies, the CS rate in breech pregnancies was high (>70%). This part could have been reduced by versions. Both primi and multigravida particularly with un-scarred uterus could undergo versions and vaginal breech delivery should be promoted in multigravida.

V. CONCLUSION

Indications based classification system is most frequently used till now & it shows why the CS was performed but it has many drawbacks like unclear definitions for some of indications & overlapping of indications.

Robson's ten groups classification system shows on whom the CS was performed. But none of the above classification system gives exact idea when used alone. So, we have tried to combine both the classification systems for better evaluation of caesarean section rate. We find that combination of these two systems which include CS rate along with indications in each group explain specific reasons for performing CS which in turn can help to reduce CS rate worldwide.

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***Corresponding Author: Dr. Ami V. Mehta**

M.D., D.G.O., Fetal Medicine Fellow, Department of Obstetrics & Gynecology, Smt. NHL Municipal Medical College, V.S. General Hospital, Ahmadabad.