

Retrospective Analysis Of Caeserean Sections According To Robson's Classification System At A Tertiary Care Teaching Hospital In Telangana State.

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Abstract

Background: The caesarean section (CS) delivery rate in India increased over last 20 years. Identifying the proportion of women in various categories as per Robson's ten groups classification system and CS rate among them is important to bring down the increasing CS rate.

Methods: The retrospective study was conducted at Niloufer Hospital for Women and Child Health, a tertiary care teaching hospital in Hyderabad, Telangana state, South India. The data was collected for the women delivered by CS during January 2017 to December 2017 in various groups as per the Robson's ten group classification system were calculated.

Results: Total of 6662 women delivered during the study period, 2338 (35%) delivered by CS. Among women with previous CS, CS rate was very high(94.3%). Women with previous CS(group 5) contributed maximum(54.5%) to total number of CS. Primigravida constitute 2102 women with CS rate of 14.03%.

Conclusions: In the present study repeat CS was the highest contributor to all CS deliveries.

Key words: Caesarean section, Robson's ten group classification.

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I. Introduction

Caesarean section (CS) rates continue to rise throughout the developed world and developing countries. Its incidence continues to rise to what some health care providers consider epidemic proportions.¹

The World Health Organization has proposed that a CS rate greater than 10-15 % is not justified in any region in the world¹ as CS rates above this are not associated with additional reduction in maternal and neonatal mortality and morbidity.^{1,2} Many potential explanations have been proposed for the progressive trend in abdominal delivery including maternal request³⁻⁵, medico legal concerns⁵, obesity⁶⁻⁸ and increasing maternal age⁹⁻¹¹, increasing number of pregnancies following infertility treatment, increasing number of women with prior CS delivery, changes in obstetric practice having experience regarding use of instruments and breech delivery.

Most obstetric units report their overall CS rate, but this alone is limited value in interpreting differences in practice and can be misleading because an institute with a high proportion of nulliparous may predicate an inherit by higher CS rates than institutional delivering a large proportion of multiparous women without previous caesarean scars.

Several published studies have hitherto explored attempts to arrest the ongoing rise in CS rates¹² and also on the development of protocols that could be potentially reduce these rates.^{12,13,14}

The ten group classification has been introduced in a number of institutions and incorporated into their audit process so that local trends can be monitored overtime.

The Robsons ten group classification system¹⁵ allows analysis of CS rates according to following characteristics of pregnancy.

1. Single or multiple pregnancy.
2. Nulliparous or multiparous with a previous CS.
3. Cephalic, breech presentations or other malpresentations.
4. Spontaneous or induced labour.
5. Term or preterm births.

TABLE:1

Ten-group classification	
Group	Classification
1	Nulliparous, single cephalic, >=37 weeks, Spontaneous labor
2	Nulliparous, single cephalic, >=37 weeks, induced (including prelabour CS)
3	Multiparous (excluding previous cs), single cephalic, >=37 weeks, in spontaneous labor
4	Multiparous(excluding previous CS), single cephalic, =>37 weeks, induced (including prelabour cs)
5	Previous CS, single cephalic >=37 weeks
6	All nulliparous breeches
7	All multiparous breeches (including previous cs)
8	All multiparous pregnancies(including previous CS)
9	All transverse/oblique lies (including previous CS)
10	All preterm single cephalic < 37 weeks, including previous CS

II. Methods

This retrospective study was conducted at Niloufer Institute for Women and Child Health in Hyderabad. This study protocol was approved by the institute ethics committee of osmania medical college.

All the women delivered during a period of one year from January 2017 to December 2017 were included in the study. The data was collected from records available in the hospital. Among the women delivered, women delivered by CS proportions in various groups according to Robson's ten group classification were calculated.

III. Results

A total of 6,662 women delivered during the study period. Among them, according to Robson's ten group classification system, most of the women 1,275(54.5%) were in group 5, followed by 231(9.8%) in group 4. Closely followed by group 10 constitutes 220 preterm deliveries ended in CS rate with value of 9.4%. the smallest group was group 9 with only 23 women having abnormal lies constituting only 0.98% of total CS .

TABLE:2 Relative size of each group according to Robson's ten group classification system.

Group number	Robson's group classification	Number	Percentage
1	Nulliparous, single, cephalic, >37 weeks in spontaneous labour	168	7.1%
2	Nulliparous, single, cephalic, >37 weeks induced labour or CS before labour	127	5.4%
3	Multiparous (excluding previous CS) single, cephalic, >37 weeks in spontaneous labour	112	4.7%
4	Multiparous (excluding previous CS) single, cephalic, >37 weeks induced labour or CS before labour	231	9.8%
5	Previous CS, single, cephalic, >37 weeks	1275	54.5%
6	All nulliparous breeches	50	2.1%
7	All multiparous breeches	70	2.9%
8	All multiple pregnancies	62	2.6%
9	All abnormal lies	23	0.98%
10	All single, cephalic, < 36 weeks including previous CS	220	9.4%
TOTAL		2338	100%

Among various groups CS rate was 100% in women with breech presentation either nulliparous (group 6) or multiparous (group 7) and all women with abnormal lie(group 9). In the nulliparous women CS rate was higher in group 1 (168/1007) which constitutes 7.1% of overall CS than in group 2 (127/1095) those who were induced or taken for CS before labour. In contrast in multiparous women CS rate was lower in 112/1376(4.7%) in those who went into spontaneous labour(group 3) where it was higher 231/736(9.8%) in those who were induced.

TABLE 3: CS Rates among women groups according to Robeson's Ten group classification system

Group	No of Women in group	No of C-sections	CS Rate in each group(%)	Contribution made by each group to the overall c section
1	1007	168	16.7%	7.2%
2	1095	127	11.5%	5.4%
3	1376	112	8.1%	4.8%
4	736	231	31.4%	9.9%
5	1351	1275	94.4%	54.5%

6	50	50	100.0%	2.1%
7	70	70	100.0%	3.0%
8	78	62	79.5%	2.7%
9	23	23	100.0%	1.0%
10	876	220	25.1%	9.4%
Total	6662	2338		100%

Group 5 was further analysed according to the indicators of CS. Total cases were 1351 out of which 76 were delivered by VBAC (5.6%). No of patients with repeat LSCS were 1275(94.3%). Out of 1275 women with previous LSCS 395 women (30.9%) are previous 2 CS ,326 women (22.5%) have CPD.32 women (2.5%) have fetal distress during TOLAC. 54 women (4.2%) have antepartum complications like placenta previa, GDM and HTN.388 women (30.4%) are not willing for TOLAC inspite of counselling hence they were taken for CS. Only 80 women out of 1275 have scar tenderness(6.3%) for which CS was done.

TABLE:4- Indications for CS in women with previous LSCS (GROUP 5)

Sl no	Indication	Number	Percentage
1	CPD	326	25.6%
2	Antepartum complications - APH, GDM, HTN	54	4.2%
3	Not willing for TOLAC	388	30.4%
4	Previous 2 LSCS	395	31%
5	Foetal distress	32	2.5%
6	Scar tenderness	80	6.3%
		1275	100%

IV. Discussion

There has been a lot of concern about increased CS rates in last few years¹⁵. One of the factors preventing a better understanding of this trend and underlying causes is the lack of a standardized internationally accepted classification system to monitor and compare CS rates in a consistent and action oriented manner. The total number of Caesarean deliveries is the sum of the number of each events in Robson's Group 1-10 combined. In our study, CS rate was 35.1 %. Similar high rates were observed in study by Patel R V¹⁶ around 40 % and 25.7 % by Katke R D¹⁷ in various hospitals in India. Similar high rates of 32 -38% also was observed in study done by Abdel – Aleem H¹⁸ in Egypt.

Group 1 and 2 usually account for 35-40% of all deliveries. In our study they account for 31.5%. Group 1 should be larger than

Group 2. In our study Group 2 is slightly larger than (1095/1007) Group 1. But CS rate Higher in Group 1 than group 2 (7.1% / 5.4%).

Group 3 and 4 usually account for 30-40% of women. In our study they constitute 37.5% of all deliveries. Group 3 was larger than Group 4 (1376/736).

Group 5 should consist no more than 10% of women. In our study group 5 consists of 20.3%. As Niloufer Hospital is a tertiary care centre, majority of Previous CS patients are referred from other Area Hospitals and Urban Health Centres.

Group 6 and 7 should include 3-4 % of all women. In our study they constitute 1.8%.

Group 8 should include 1.5-2% of women. In our study they constitute 1.2%.

Group 9 should comprise 0.2 to 0.6% of women with CS rate of 100%. In our study 0.3% of women had abnormal lie.

Group 10 includes approximately 5% of women. In our study 13.1% were in group 10. As our hospital is having state of Art NICU centre covering entire Telangana State, our centre is referral centre for cases with high risk for preterm deliveries. So the group constitutes 13.1 % of total deliveries.

A CS rate for group 1 less than 10% is desirable. In our study 16.6% which was in accordance with the Study done in other parts of India by Shirsath A¹⁹ (19.6%), in Oman by Tahira Kazmi²⁰ (13.0%). The CS rate for group 3 should be 2.5 -3%. In our study the CS rate was 8.1% which was in accordance with the studies by Shirsath A¹⁹ (4.8%) and Kansara Vijay²¹ (5.4%).

The CS rate in group 4 should be below 20%. In our study 31.3%. this was higher than the study done by Shirsath A¹⁹ (6.6 %). With good perinatal outcome, the CS rate of 50-60% of Group 5 is excellent. In our study the CS rate in Group 5 was 94.3% which was slightly higher than those observations done by Shirsath A¹⁹ (87.2%), Slightly lower than CS rate in study done by Kansara Vijay²¹ (98.3%).

In our study group 5 made highest contribution of 54.5% of all C. Sections. This was similar to the observations made in most of the studies across India. Similar results were observed by Shirsath A¹⁹ (54.5%) and Kansara Vijay²¹ (46.7%).

V. Conclusions

Because Previous CS / Repeat CS is consistently the most significant contributor to overall CS rates, given the ongoing debate regarding the safety of VBAC, these findings emphasise the important influence that management of singleton cephalic nulliparous term pregnancies can have on overall CS rates.

Obstetric practices in relation to the management of spontaneous labour, including the diagnosis of labour, early amniotomy, the provision of one to one midwifery care, the use of oxytocin to correct the Dystocia, intra partum Fetal blood sampling and obstetric training in operative vaginal delivery will reduce the CS rates in primigravida's and also encouraging VBAC in patients with previous LSCS to reduce the overall CS rates.

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Conflict of interest

No conflict of interest was declared by the authors.

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