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Analysis of Caeserean Section Rate, According to Robson's Criteria at Diphu Medical College and Hospital, Diphu

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Abstract **Original Research Article**

Objective: Globally, caesarean section rates are mounting and currently exceed the safe upper limit of 15%.Monitering CS rates using clinical indications and obstetrics sub-group analysis could confirm that women in need have been served. For that purpose, we have analyzed the caesarean section rates in Diphu medical College and hospital, Diphu, Karbianglong with Robsons classification system. ***Materials and Method:*** A cross-sectional observational study is undertaken over a period of 6 month in DMCH. ***Results:*** Total deliveries in the study period were 1171 births.50.21% delivered by caesarean section. Of which, the largest contributors are group2 (27.72%), 5(25.85%) and group 1(23.98%). ***Conclusion:*** As the caesarean section rates are raising exponentially, the increasing primary caesarean section rates to be targeted to reduce the overall caesarean section rate.

Keywords: Caesarean section rates, Robsons criteria.

INTRODUCTION

Caesarean section is a life-saving surgical procedure that can prevent maternal and perinatal mortality and morbidity. However, over the last decades, the use of caesarean section as a mode of delivery has been increasing to unmatched level with worrisome consequences. In order to understand what is driving this trend, and to ensure that it is not being used unnecessarily, WHO proposed the use of the Robson classification (also known as the 10-group classification) as a global standard for assessing, monitoring and comparing caesarean section rates both within healthcare facilities and between them1. The system classifies all women into one of 10 categories that are mutually exclusive and, as a set, totally comprehensive. The categories are based on 6 basic obstetric characteristics that are routinely collected in all maternities (parity, number of fetuses, previous caesarean section, and onset of labor, gestational age, and fetal presentation).

MATERIALS & METHOD

This retrospective study was performed in the department of obstetrics and gynecology at Diphu medical college and hospital, Karbianglong from December 2019 to May 2020. All women who delivered after 28 weeks of gestation, during this period are included. Relevant obstetric data are collected and women are classified according to the system. Results are calculated at the end of this period. Before proceeding, approval was sought from hospital ethical and research committee.

RESULTS

There were total numbers of 1171 birth in DMCH during the study period. CS was performed in 588 women resulting in an overall CS rate of 50.21%. Women in each of the ten groups are shown in TABLE.

Rate of caesarean section by the Ten-Group Robson classification

	Relative size of groups(%of total number of births)	**CS rate in each group (% of number of women in each group)**	**Contribution made by each group to the overall CS rate%**
1.Nulliparous, single, cephalic, ≥37weeks, spontaneous labour	24.36%	49.47%	23.98%
2.Nulliparous, single, cephalic, ≥37week, Induced or. CS before labour	18.29%	76.17%	27.72%
3.Multiparous, single, cephalic, ≥37weeks, spontaneous labour	28.29%	10.27%	5.78%
4.Multiparous, single, cephalic, ≥37weeks, Induced or CS before labour	8.29%	60.82%	10.03%
5.Previous CS, singleton, cephalic, ≥37weeks	13.68%	95.00%	25.85%
6.All nulliparous breeches	1.03%	83.33%	1.70%
7.All multiparous breeches	1.28%	33.33%	0.85%
8.All multiple pregnancies	1.54%	27.78%	0.85%
9.All abnormal lies	0.68%	87.50%	1.19%
10.all singleton cephalic, <37wks	2.56%	40.00%	2.04%

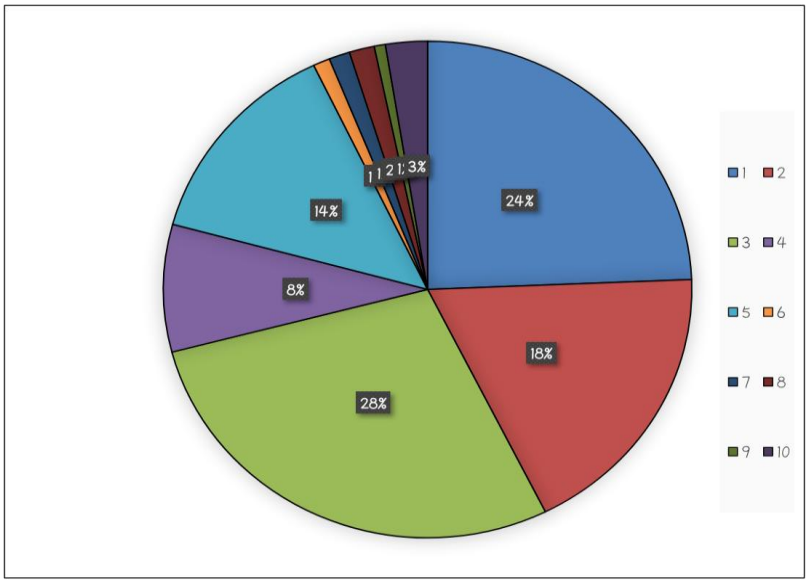
Definitions used in this setting: 1. Spontaneous labour: on arrival 3 contractions/10 min with cervical effacement > 50% and dilation > 3 cm, with intact or ruptured membranes. 2. Induction: use of misoprostol, PGE2, Foley catheter or oxytocin in a woman who does not fulfill the criteria for spontaneous labour

*group 7-10 includes women with previous uterine scars.

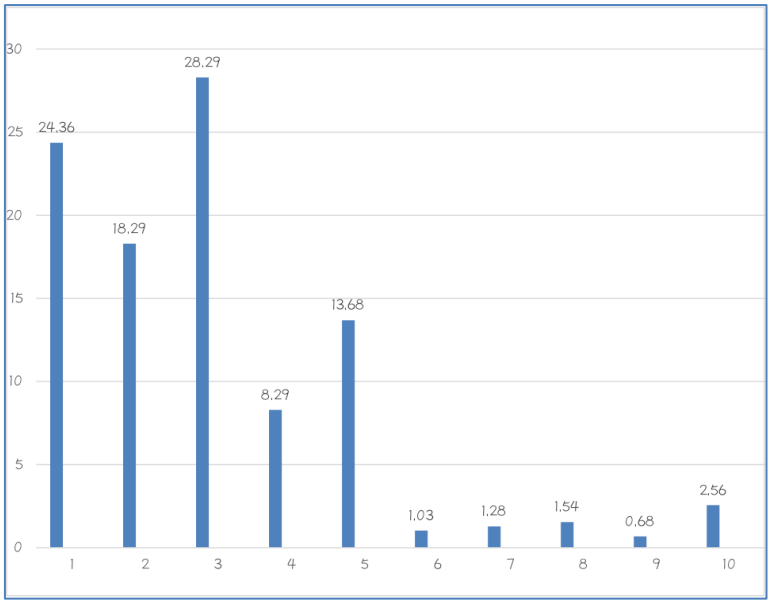
Women in each of the ten groups are shown in the above mentioned table. The table also shows the CS rate in each of these 10groups as well as the contribution of each group to the overall CS rate of 50.21%.

The largest contributor to the overall CS rate was nulliparous women with induction of labour or elective CS (group2), 27.72% of the overall 50.21%. CS rate in this group was 76.17 %(163 out 214 women).

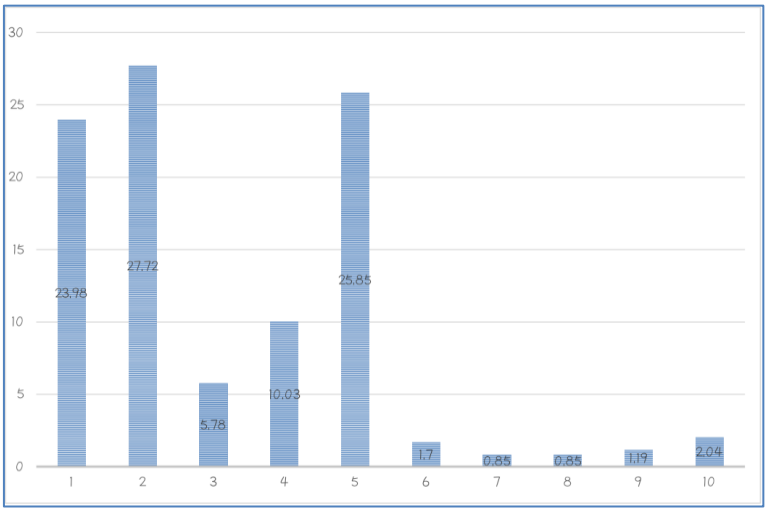
The second largest contributor was group 5 with previous CS, 25.85% of the overall 50.21% CS cases. However, CS rate in this group was maximum i.e. 95.00% (152 women out of 160 women), followed by first category of women i.e. nulliparous women who went into spontaneous labour with CS rate of 23.98% of overall CS cases. Most of the nulliparous breech i.e. 10 out of 12 cases were selected for elective Caesarean section, whereas it is seen that in multiparous breech, 66.67% delivered vaginally. 7 out of 8 cases of malpresentations are put up for caesarean section, whereas we have seen that Caesarean section in multiple pregnancies attribute only 27.78% of total multiple pregnancies.



Pie diagram showing contribution of each group to total number of births



Bar diagram showing contribution of each group to total number of births



Bar diagram showing contribution made by each group to overall cs rate

DISCUSSION

Worldwide, we have seen that there is an increase in caesarean section rate, but this can't be assessed on the basis of rates, rather than whether it is needed or not. As per WHO statement "Every effort should be made to provide caesarean sections to women in need rather than striving to achieve a specific rate "With this intention, WHO has proposed the Robsons classification to identify and analyze the groups of women which contribute most and least to overall caeserian section rates so that we can assess the effectiveness of strategies or take interventions to optimize the use of caesarean section.

WHO recommended the ideal caesarean section rate to be 15%. But the present Caesarean section rate is 50.2% which is similar to the caesarean rate in CHINA i.e 47.6% according to WHOMCS study. Samba *et al*. [2] study reported a caesarean section rate of 46.9%. Begum et al. [3], observed an increased caesarean rate of 82% in a cross-sectional survey in 2015 in Urban Bangladesh. While, Tanaka *et al*., [4], in his study in Australia found a caesarean section rate of 23.5%. Thereby, it is seen that countries with HDI tend to have a higher caesarean section section rate over LDI countries.

Also, ours being a tertiary care hospital and the only hospital in the district where caesarean sections are performed ,we get huge number of referrals from peripheral hospitals of the district as well as from the nearby districts and thus, tend to have more caesarean section with disparity from ideal rate.

The increase CS rates, 76.17% in nulliparous women with induction of labour or prelabour CS compels us to review the criteria's of induction of labour, which needs more vigilance. Within this group, the commonest indication is postdated pregnancy .In

some cases by waiting for spontaneous labour with efficient monitoring of fetal status and the liquor volume; probably we can bring a dip in the caesarean section rate.

However the rising incidence of elderly primigravida along with increased detection of high risk mothers and pregnancies on time has contributed to the higher incidence of caesarean section.

Aguiar *et al*. [5] study found group 1 and group 2 to account for 38.7%.Ray *et al*6 has shown that nulliparous women who are induced or underwent CS before labour contributes highly to overall CS rates, next to women with previous CS, which contributes maximum. Studies by Ann M et al. [7] have found induced primigravida underwent major proportion of primary sections. Mbaye *et al*. [8] has also noted similar results. Reducing the major modifiable factor in primary CS rate, we can also reduce the repeat CS rate. Pandey *et al*. suggested that the best way to reduce overall CS is to prevent primary CS [9]. For these improved case selections for labour induction and prelabour CS is of utmost importance.

In our study, we have found that the CS rate is 95% in category 5 i.e women with previous Caesarean section. This is mostly because the number of women who attempt VBAC has declined over recent years due to fear of uterine rapture, even though vaginal birth after one CS has been advocated as a safe option. As well as it is a common practice to recommend an elective repeat CS to women with 2 or more caesarean section. Furthermore, medico-legal reasons are an added factor of increased CS rate in post caesarean section cases.

Another issue to address is increased CS rate in nulliparous women with spontaneous labour for indications like Failure to progress in labour and fetal heart rate concern. A large study on singleton, cephalic term pregnancies in spontaneous labour concluded that active labour with cervical dilatation of 0.5 to 1 cm per hour only begins after 6 cm dilatation and it may take longer than currently expected normal time frame for many women to reach 6 cm cervical dilatation [10]. It is possible that some women may be having a CS for failure to progress when they have not even begun to be in active labour [11].

Malpresentations, especially Breech presentations also contributes significantly to overall as well as primary CS rates in the present study. Dhodhapkar *et al*. [12] have noted 100% CS rate in Breech presentations regardless of parity. Samba *et al*. [2] have also noted high section rates in Breech. We should however be more proactive in offering external cephalic version to all eligible women with breech presentation and consider offering vaginal breech delivery with clear guidelines to suitable women.

With a view to reduce the caesarean section rate to keep up with WHO and ACOG guidelines, Sharma *et al*. [13] have proposed some methods to reduce caesarean section rates.

1. More liberal use of ECV for breech presentation and transverse lie.
2. Assisted breech delivery to be accomplished in suitable cases.
3. Maintenance of partograph and active management.

More liberal use of fetal scalp pH in fetal distress for fetal acidosis

5. Destructive operation can be done in some cases of IUFD.

CONCLUSION

Caesarean section rates should no longer be thought of as being too high or too low, but rather whether they are appropriate or not, after taking into consideration of all relevant information. However, the procedure has its inherent negative consequences(short and long-term) for mother and child, as well as being an economic burden to the society and the family so, there is every reason to attempt prevention of further increase in caesarean section rate. And Robson classification system provides us a very important tool of monitoring the caesarean section rate and thereby reduces its rate whenever it is possible.

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