ORIGINAL ARTICLE

Robson Ten Group Classification System and Fetal Distress as the Indication for Caesarean Section

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ABSTRACT

Background: The marked increase in the rates of CS has not only raises the challenges for the medical professional but also became a debatable issues for many gynecologists. In order to explain the increasing rates of CS it is necessary to identify which group of women is more frequently undergoing CS.

Objective: The study aimed to evaluate the role the fetal distress and Robson ten group classification play for the indication of caesarean section.

Study design: It is a retrospective study conducted at Khawaja Muhammad Safdar Medical College, Allama Iqbal Memorial Teaching Hospital Sialkot, from January 2022 to June 2022.

Material and Methods: 5787 women were admitted in tertiary care unit for delivery. Among these 2031 went through caesarean and the remaining delivered normally. Most of the population was included in group 1 and 5, where 501 and 535 individuals were present.

Results: The group having the most contribution towards CS was group 5. And the group showing least contribution towards CS was group no.10. Group 5 also showed high contribution towards CS. The evaluation was carried out for 205 patients, the mean age of the patients was 26 years in this study. Most of the patients belonged to gestation week greater than 36 weeks.

Conclusion: The group that has low risk had more chances to contribute to the CS rate. The indication for CS was most of the time fetal distress which was seen at the time patients were admitted in hospital.

Keywords: Caesarean section and fetal distress.

INTRODUCTION

The higher number of the morbidity and mortality cases are associated with the Caesarean section. CS are also costly. There rates are increasing around the globe with the passage of time. The rates of caesarean section are even higher in the middle-income countries. It is also reported that women in the middle income countries not only undergo CS for one time, but also for more than one time. The history of CS rates in women with subsequent CS has also raised in the previous years[1-2]. The need of the hour is to reduce the CS rates in such countries. This will not only reduce the maternal mortality and morbidity rates but also helps to reduce the expense associated with the maternal and perinatal medical care. It is one of the most commonly performed surgical procedure around the globe. The life of health care professional and gynecologist become more strenuous as the results of overwhelming working. The marked increase in the rates of CS has not only raises the challenges for the medical care professional but also became[3-4] a debatable issues for many gynecologists. In order to explain the increasing rates of CS it is necessary to identify which group of women is more frequently undergoing CS. Therefore a classification system is required to analyze, compare and audit the Caesarean section rates in the most consistent and standardized manner one can. Different studies have provided with the versatile classification system, but the most of the studies have concluded that the Robson ten group classification system is more reliable and authentic than others. It was first introduced in 2001. It is internationally recognized system for the classification of caesarean[5-7]. The one of the major cause of the CS is foetal distress. It was categorized into group 12. According to the WHO the rates of CS must not exceed from 10-15%. There would be the higher reduction in the cost of the medical health care if the CS rates decrease to less than 15%[8-9].

The medical professional's expertise and the patient's population highly effects the rates of the CS. TGCS system is reproducible.

MATERIAL AND METHODS

It is a retrospective study conducted for the duration of six months at the Gynaecology department of Khawaja Muhammad Safdar Medical College, Allama Iqbal Memorial Teaching Hospital Sialkot from January 2022 to June 2022.The study was done over a period of one year; 5787 women were admitted in tertiary care unit for delivery. Data was taken after written consent of the patients. The ethical and review board committee of the institute approved the study. The data was stratified by using Microsoft word and excel.

The sample size was calculated from the unpublished hospital data[10]. The women were classified according to RTGC system. The classification table was created and its comparison with Robson guideline was made. The SPSS tool was used for the statistical analysis. Different test chi-square were conducted for analysis of the data. The detailed history and physical examination record of the patients were documented and recorded in a Performa. The data about maternal age, gestation age, and parity was collected. The RTGCS report was used for the data assessment.

RESULTS

The study was done over a period of one year; 5787 women were admitted in tertiary care unit for delivery. Among these 2031 went through Caesarean and the remaining delivered normally. Most of the population was included in group 1 and 5, where 501 and 535 individuals were present. The group having the most contribution towards CS was group 5. And the group showing least contribution towards CS was group no.10. Group 5 also showed high contribution towards CS.

Table 1: Robson classification report data made from total population

RTGCS	Total women undergoing CS	Total women delivering	Size of group	Rate of CS group %	Relative link of group to CS rate
1	501	2065	17	24	12
2a	233	645	5.6	37	5.8
2b	240	240	2.07	100	5.7

3	150	1500	12.5	10	3.6
4a	36	325	3	11	0.85
4b	90	90	0.75	100	2.21
5	535	540	4.5	100	13.1
6	67	65	0.75	98	1.5
7	55	67	0.75	81	1.5
8	25	26	0.23	90	0.75
9	5	5	0.045	100	0.125
10	94	225	2	40%	2.30
Total	2031	5787	100.00		100.00

The evaluation was carried out for 205 patients, the mean age of the patients was 26 years in this study. Some of the other parameters are shown in the table no.2. The 16% patients belonged to age group 16-23 years. Most of the patients were from 24 to 33 years of age. Most of the patients belonged to gestation week greater than 36 weeks. Fetus order was single in case of 50 patients.

Table 2: Grouping by obstetric factors

Parameters		No. of participants	%
Age group	16-23 y	75	36
	24-33 y	115	48
	>34	15	7
Weeks of gestation	<31 weeks	2	1.3
	32-36 weeks	20	12
	Greater than 36 weeks	155	88
Anc visits	<3	83	46
	>3	90	42
	Un-booked	15	8
Gravidity	Primigravida	90	42
	G2	75	36
	G3	25	12
	G4	8	4
Parity	P0	105	50
	P1	80	40
	P2	15	8
Abortion	A1	30	72
	A2	5	24
	A3	3	8
Fetus order	Single	2.3	100
	Multiple	2	0.9
Type of labour	Spontaneous	100	46
	Forced	30	24
	Not in labour	75	35
Past Cs	Yes	64	30
	No	140	68

Distress evolved in fetus after the admission was analyzed and it was found that low risk group included 88 patients and 116 were in non-low risk group.

Table 3: Distress evolved in fetus after admission

	Fetal distress	No fetal distress	Total	P value
Low risk	35	53	88	
High risk	16	100	116	<0.005
Total	51	153	194	

All these admissions had greater link with the distress. These groups showed significant link with distress in fetus which can be suggested as indication for CS.

Table 4: Distress in fetus as a main indication of CS

	Fetal distress	No fetal distress	Total	P value
Low risk	36	50	86	
High risk	20	100	120	<0.005
Total	56	150	206	

DISCUSSION

The study was carried out to find the Robson ten group classification system (RTGCS) and the distress in fetus as a sign for CS in women admitted to tertiary care unit for a period of 6 months. The study included 205 patients that had evaluated for distress in fetus. CS was found to be as common as 35% in case of our studies. This finding is in accordance with the previous study[11-12]. The group 1 and 5 had the most contribution towards the CS as per our study. Similar results were seen in previous literature as well[13]. All the remaining groups 3, 4, 6, 7, 8, 9 and 10 had comparatively less contribution as compared to the group 1 and 5. The difference in rates of contribution found in our study can be due to the population based differences in the previous studies. Off all the patients evaluated in this study there were 40 patients that had complications like PPH, GHTN and other blood transfusion related issues. Some of them had maternal issues complicated during pregnancy. The rate of CS in group 2 can also be considered as high as compared to Robson's guideline. The population of group 2 was smaller therefore there were unsuccessful success rate there. As per Robson's guidelines the CS rate in case of group 4 should be more than 15%[14-15]. In this study the rate was 55% this was because of 4b where the rate of CS was 50%. As per studies this can be due to multiparous participants as they have low IOL[16]. The rate of CS in group 5 was analyzed and it was found that it was higher than the Robson's guidelines. It was higher in other previous studies as well. It was suggested that may be because the women having one previous scar were scheduled for CS without even going through labor. The CS rate in group 1 patients was 24% which is more than the Robson's guidelines this mainly was because of nulliparous condition where mostly normal delivered take place. Among the women who went through CS for the sake of fetal distress, almost 70% were included in group 1 and 2. There was found a statistically significant risk of fetal distress as a sign for CS. After admission there was found distress in fetus that could lead to CS in future.

There can be many reasons of the distress found in fetus as sign of CS. It can due to misdiagnosis of heart beat of the fetus, or it can be due to absence of proper monitoring done by the staff[17-18]. In this case as the criteria is not authentic for group 1 and 2 form RTGCS so the threshold of CS will become even lower. There was high rate of CS in our study and it can be due to the fact that the hospital is high burden center where complicated cases come very frequently therefore many cases of CS were seen here. In this study there was a high rate of women that were nulliparous, and the remaining had parity. In previous studies most of the women were also nulliparous [19-20]. Most of the patients were in primigravida category. Our study has shown that group 1 and 5 contributed to CS rate the most almost 70% as compared to other groups. Group 2 mostly included those women that had more than one child already. And group 1 in our study included mostly those women who had 1 child before the present pregnancy.

Most of the patients were admitted as they had previous history of CS. There were 18% patients that were admitted because of LPOL and 11% patients reported that there 9 months are completed and there are no signs of labor. Most of the complications related to mother were seen in case of group no. 2 just in accordance with the previous studies [21-23]. These comprised majority of the maternal complications happened in our study. Then it was followed by group 1. And may be this rate of complications also play role in decreasing the CS chance in these groups. The study was done by taking data from a single health center. If the data will be taken from multiple other hospitals, then more precise results can be drawn. So the study found there is a

link between fetal distress as a sign for CS in women during pregnancy.

CONCLUSION

The group that has low risk had more chances to contribute to the CS rate. The indication for CS was most of the time fetal distress which was seen at the time patients were admitted in hospital. There is a limitation of RTGCS in low risk group for prediction of CS. Robson's guidelines hint towards misdiagnosis of fetal heartbeat and fetal distress. There is recommendation of reassuring the misdiagnosis of fetal distress so that burden of CS can be reduced.

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