Original Research Article

Incorporating Robsons classification in analysis of caesarean section at rural territory centre for 18 months

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ABSTRACT

Background: With the rise of caesarean sections (CS) over the last five decades, World Health Organization (WHO) proposed that health care facilities to use the Robsons 10 group classification system to audit their caesarean sections rates. This classification would help understand internal structure of the CS rates at individual health facilities identify population groups, indication in each group and formulate strategies to reduce these rates.
Methods: This is a retrospective study for a period of 18 months at tertiary care hospital in rural area at department of obstetrics and gynaecology, Dr. PSIMS & RF, Chinnoutpalli, Vijayawada, Andhra Pradesh. Women who delivered during this period were analysed and classified into Robsons group 10 classification and percentages were calculated for the overall rate, the representation of groups, contribution of groups and caesarean percentage in each group in rural territory centre during the period of January 2021 to June 2022.
Results: From January 2021 to June 2022 there were total of 547 deliveries. Out of which 224 had caesarean section accounting for a caesarean delivery rate of 40.9%. When data was analysed according to Robsons 10 group classification maximum contribution of caesarean section was with Robsons group 5.1 (36%), which comprised of patients with term cephalic multiparous with one previous scar. Followed by group 2A (21%), which comprised of patients with term cephalic nulliparous with labour induced. Breech pregnancies are completely undergoing caesarean section (groups 6 and 7).
Conclusions: We identified the contribution of each group to the overall CS rate as well as the CS rate within each group. Women with previous caesarean delivery contribute to the increasing proportion of caesarean deliveries. Use of Robson criteria allows standardized comparisons of data and identifies clinical scenarios in caesarean rates. All institutes to audit themselves to evaluate quality of caesarean section rates and to rationalize caesarean rates. Impact of interventions to reduce caesarean rates should be studied and documented. Evaluation of existing management protocols and further studies into indications of CS and outcomes in our setting will helps us to design strategies and improve outcomes.

Keywords: Robsons 10 group classification, Caesarean section

INTRODUCTION

The caesarean delivery rates have been increasing in the last few decades throughout the world in both developed and developing countries upto 50 to 60% in many centers. There has been increased rate of 5% in 1940-1950s to 15% in 1970-1980s. There has been drastic increase in the caesarean rate globally. The rising rate of caesarean section is a matter of international public health concern as it increases maternal morbidity.[1] In 2001 Robson proposed Robsons criteria for standardization of classification of caesarean section. The 10 group Robson classification of caesarean section has been accepted by World Health Organization (WHO) in 2014 and FIGO in 2016. Robsons

classification will aid in optimization of caesarean section use, assessment of strategies aimed to decrease caesarean section rate, thus improving clinical practices and quality of care in health care centers.[2]

Aim

This study was done to analyse caesarean sections using Robsons ten group classification system (TGCS) and to determine the groups of patients which contribute to caesarean sections in the study group over a period of 18 months.

Objectives

Objectives of the study were: to classify the caesarean section according to indications using Robsons ten group classification system (TGCS), and to audit the increasing causes of caesarean section in our territory care hospital.

METHODS

This is a retrospective study carried out over a period of 18 months from January 2021 to June 2022 in the department of obstetrics and gynaecology, Dr. PSIMS & RF, Vijayawada, Andhra Pradesh. All data was entered in statistical package for the social sciences (SPSS) version 26.0 for analysis in structured proforma.

Table 1: Robsons ten group classification.

Group	Description
Group 1	Nulliparous single cephalic more than 37 weeks in spontaneous labor
Group 2	Nulliparous single cephalic more than 37 weeks induced or CS before labor
	2A-induced labor, 2B-CS before labor
Group 3	Multiparous (excluding previous CS) single cephalic more than 37 weeks in spontaneous labor
Group 4	Multiparous without previous uterine scar, single cephalic more than 37 weeks induced or CS before labor
	4A-induced labor, 4B-CS before labor
Group 5	Multiparous with previous cesarean section single cephalic more than 37 weeks
Group 6	All nulliparous with single breech
Group 7	All multiparous with single breech including previous cesarean section
Group 8	All multiple pregnancies including previous cesarean section
Group 9	All women with single transverse or oblique lie including previous cesarean section
Group 10	All single cephalic less than 37weeks pregnancies including previous cesarean section

Inclusion criteria

Retrospective observation study from parturition and case sheets, patients who delivered by caesarean section during the period (January 2021–June 2022) were recorded and classified according to Robsons 10 group classification system.

Considered parameters are: parity, gestational age, fetal presentation, number of fetuses, and onset of labour.

Exclusion criteria

Term and preterm normal vaginal deliveries, and term and preterm instrumental vaginal deliveries were excluded from the study.

Collected data was analysed using simple statistical measures like percentage and proportion.

RESULTS

From January 2021 to 2022 there were 547 deliveries. Out of which 224 had caesarean section and remaining were vaginal deliveries.

Almost about 78.1% of women who underwent caesarean section were between 36^{+1} to 39^{+6} weeks (Table 2).

Table 2: Period of gestation versus no of deliveries.

Period of gestation (weeks)	Total no. of cases	Percentage
Less than 36	47	20.98
36^{+1} to 39^{+6}	175	78.1
More than 40	2	0.89

Out of 224 caesarean deliveries 3% were twin pregnancies and 97% were singleton pregnancies (Table 3).

Table 3: No. of pregnancies with singleton and multiple.

Parameters	Total no.	Percentage
No. of twin pregnancies	6	3
No. of singleton pregnancies	218	97

49% of cases who underwent caesarean section belongs to second gravida (Table 4).

Table 4: No. of patients who were primi and multigravida.

Gravid status	Total no.	Percentage
Primi	74	33
Gravida 2	107	49
Gravida 3	42	18

75.8% of cases who underwent caesarean section was under 21 to 30 years age group (Table 5).

Table 5: Age of patients versus who underwent CS.

Age	Total no.	Percentage
Less than 20	26	11.6
21-30	170	75.8
More than 31	28	12.5

Out of 230 new born, 152 comes under 2.6-3.5 kgs i.e., accounting for about 66% (Table 6).

Table 6: Birth weights of new born.

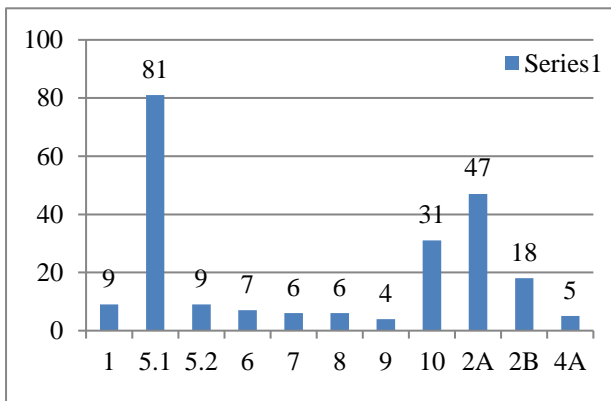| Birth weights	No. of new born	Percentage
Less than 2.5	68	29.5
2.6-3.5	152	66
More than 3.6	10	4.5

Figure 1: Grouping of patients according to RTGCS.

From January 2021 to June 2022 there were total of 547 deliveries. Out of which 224 had caesarean section accounting for a caesarean delivery rate of 40.9%. when data was analysed according to Robsons ten group classification, maximum contribution of caesarean section was with Robsons group 5.1 (36%), which comprised of patients with term cephalic multiparous with one previous scar (Figure 1). Followed by group 2A (21%), which comprised of patients with term cephalic nulliparous with labour induced. Breech pregnancies are completely undergoing caesarean section (groups 6 and 7).
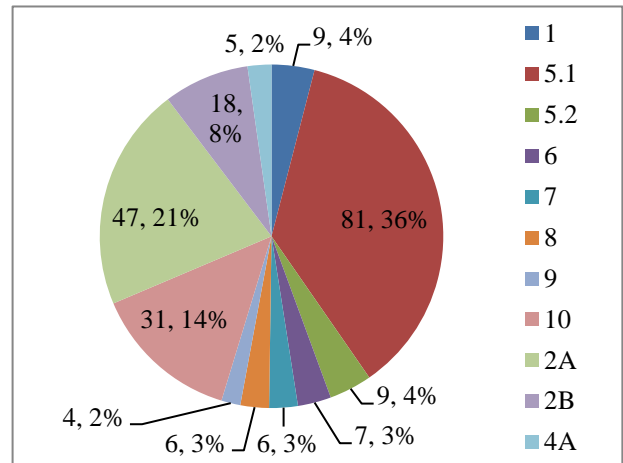

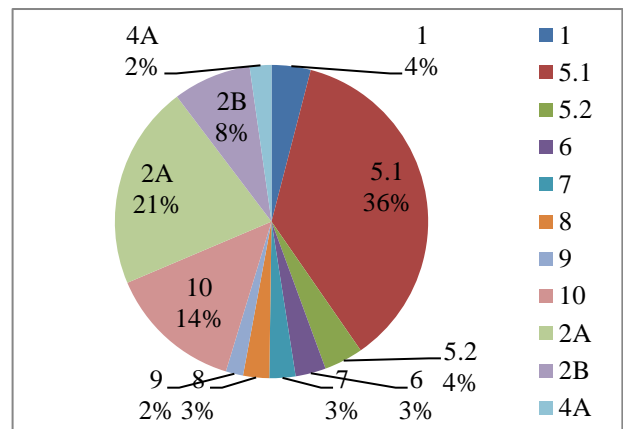**Figure 2: Pie diagram of no. of patients versus Robsons group.**

Figure 3: Pie diagram of percentage of patients versus Robsons group.

Tabel 7: Robsons scoring in patients who underwent CS.

Robsons score	Description	Number of sections	% Contribution by EACG group to total CS
1	Nulliparous single cephalic term spontaneous labour	9	4
2A	Nulliparous single cephalic term labour induced	47	21
2B	Nulliparous single cephalic term prelabour CS	18	8
3	Multi single cephalic term spontaneous labour without prev uterine scar	-	-
4A	Multi single cephalic term labour induced without prev uterine scar	5	2
4B	Multi single cephalic term pre labour CS without prev uterine scar	-	-
5.1	Multi single cephalic term with one prev uterine scar	81	36
5.2	Multi single cephalic term with 2/more prev uterine scar	9	4
6	Nulliparous single breech including prev uterine scars	7	3
7	Multi single breech including prev uterine scars	6	3

Continued.

Robsons score	Description	Number of sections	% Contribution by EACG group to total CS
8	All women with multiple preg including prev uterine scars	6	3
9	All women with single preg with transverse/oblique lie including prev uterine scars	4	2
10	All women with single cephalic less than 37 weeks including prev uterine scars	31	14

DISCUSSION

Increasing caesarean sections particularly in high income countries is a growing concern in most parts of the world.[3] According to latest survey 29.7 million births occurred through CS in 2015, which was almost double the number of births by CS in 2000.[1] WHO proposed the Robsons ten group classification system (TGCS) as a global standard for assessing, monitoring and comparing CS rates within healthcare facilities.[4] Several international studies have analyzed the utility of this system to identify factors contributing to increasing CS rates which is a growing global concern.[5]

In my present study the rate of caesarean section in our hospital (40.9%) is higher than WHO (15%).[6] The caesarean section rate in year 2013-2014 in India was 16.4%[7]. The rise to 18% in 2015-2016 is seen when survey conducts by nation family health survey. The average caesarean section rate in Asian countries was lower when compared with USA.[8]

In the present study the major contribution to overall CS is by group 5 (women with previous CS) followed by group 2A (term nulliparous induced labour).[9] Almost same findings have been noted in various indian and international studies.

Attempts to reduce repeat CS (by promoting trial of labour after caesarean section) for reducing overall CS rate should be under taken by full-fledged obstetric units with careful selection of cases.[10]

Labour induction protocols vary worldwide but increasing labour inductions as an upcoming contributor to caesarean deliveries.[11] In my present study also group 2 and 4 had an increased caesarean section rate when compared with 1 and 3 respectively. So firstly, we have to limit induction of labour.[12] Secondly, we should evaluate daily about the indication of primary caesarean section.

Malpresentations especially breech presentations will also contribute to overall as well as primary CS rates in my present study.[13] CS which are being done for breech presentation can be reduced by training residents in the art of breech delivery.

The first step in the path to reduce caesarean rates is to classify under Robsons classification.[14] Standardization of indication of caesarean deliveries, regular audits and protocols in hospital will reduce the caesarean rate.[15,16]

Limitations

Present study is the first study analyzing trends of CSs and evaluating them according to RTGCS in Dr. PSIMS&RF Hospital Gannavaram, Vijayawada. Main limitation of this study was we were unable to record perinatal and maternal outcomes among study participants. As this study was single center study with comparatively short sample size.

CONCLUSION

We used the RTGCS to identify specific groups that contributed the most to the overall CS in our setting. All deliveries and caesareans should be universally categorized by the Robson's classification system. Groups contributing most to caesareans should be analysed regularly and interventions initiated. Those interventions should be targeted at reducing primary caesareans and convincing patients for trial of labour after caesarean section where possible. Inductions should be done only when necessary. All institutes to audit themselves to evaluate quality of caesarean section rates and to rationalize caesarean rates. Impact of interventions to reduce caesarean rates should be studied and documented. Evaluation of existing management protocols and further studies into indications of CS and outcomes in our setting will helps us to design strategies and improve outcomes.

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