Audit of Cesarean Section Rate through Robson Criteria in a Tertiary Care Hospital

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ABSTRACT:

Objectives: To find out the cesarean section rate after categorizing the patient according to Robson criteria in tertiary care hospital in different categories in view of increased cesarean section rate in past decade.

Methods: it was a retrospective observational study conducted in a tertiary care hospital Hayatabad medical complex Peshawar from 2016 till 2018.in this study all cases delivered by cesarean section during the period of three years were recorded and classified according to Robson's10 group classification system. The main objective was to find out that which group has contributed most to the cesarean deliveries.

Results: The total number of deliveries over this period in the hospital was 3051 out of which cesarean sections were 766, which makes the rate of cesarean section 25%.

Group 1and group 2 contributed almost 10 %, while group 7and 8 contributed 5%, and group 3 and group10 contributed 9% and 8% respectively. Highest contribution is made by group5 which is 22% followed by group 4 which is almost 18%. Least contributors were group 6 and 9, which is 4%.

Conclusion: according to this study group 5 contributed the highest number, which is the group of multiparous women with previous 1 uterine scar. It means that indication for the first ever caesarian section should be critically reviewed and must be discussed with senior experienced obstetrician to decrease the number of women in-groups 5.

Patient should be encouraged for vaginal delivery after caesarian section and indications for caesarian section should be audited regularly to decrease the number of overall caesarian sections.

Key words: caesarian section, Robson criteria, multiparity

Introduction:

Caesarian section rates have increased tremendously over the past few decades, and it is really a matter of great concern because with increased cesarean section rate not only led to increased maternal morbidity but will also increase the complications without any benefit to the and mother or baby[1, 2].

Cesarean section rate has increased from 5% in 1940s and in1950s to 15% in 1970 and in 1980s. However there has been dramatic increase in cesarean section rate globally even beyond 30% in some areas. However according to WHO it should not go beyond 15%[3].

Three main issues need to be addressed in answering the question how that how we can reduce the caesarean section rate? We need a justification to reduce the cesarean section rate acceptability to women of reducing caesarian section rate and safe implementation of reducing caesarian section rate[4].

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Any reduction in the cesarean section rate is only possible if we collect all the information and accurate data without any bias and monitor the outcome for all types of childbirth[5].

Information, which is required for interpretation of data, is caesarean section rate, outcome of the section maternal mortality and perinatal morbidity and maternal satisfaction. WHO issued a consensus statement in 1985 suggesting that there were no additional health benefits associated with caesarean section rate above 10 -15%[6,7].

In 2014 the world health statement on robson classification

"WHO proposes the robson classification system as a global standard for assessing monitoring and comparing caesarean section rates within health care facilities over time and between facilities". [8,9,10 11]

WHO statement on Caesarean section rate

Every effort should be made to provide caesarean sections to women in need, rather than striving to achieve a specific rate.

Identify and analyze the groups of women, which contribute most and least to overall caesarean section rates

Compare practice in these groups of women with other units who have more desirable results and consider changes in practice

Assess the effectiveness of strategies or interventions targeted at optimizing the use of caesarean section

Assess the quality of care and in 2015, 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 them. 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 5 basic obstetric characteristics that are routinely collected in all maternities (parity, number of fetuses, previous caesarean section, onset of labour, gestational age, and fetal presentation).

Methodology:

This study was carried out retrospectively over a period of 2 years from January 2016 to January 2018 in the department of obstetrics and gynaecology in Hayatabad medical complex. All data collected and then all women who were admitted in labor room for delivery were included and classified in one of the ten groups of Robson group classification system.

Only women who delivered normally or instrumental vaginal delivery were excluded at term or preterm.
Data was analyzed by using simple measures like percentage and proportion.

Results:
The total number of deliveries over this period in the hospital was 3051 out of which cesarean sections were 766, which makes the rate of cesarean section 25%.

When analyzing data the maximum contribution was done by group 5 (multiparous with prior caesarean section, singleton, cephalic, >/=37 weeks) almost 22.19%.

Followed by group 4(multiparous without previous caesarean section, singleton, cephalic, >/=37weeks induced labor or caesarean section before labor) almost 18%.

If we look at the trend in these two years group 1 and 2 follows the group 4 and 5 with a cesarean section rate of 10.70% in both groups respectively.

Cesarean section rate in-group 3 (multiparous without previous cesarean section, singleton, cephalic, >/=37weeks, spontaneous labour) is 9.3% followed by group 10 (singleton, cephalic, </=36 weeks (including previous cesarean section) is 8.35%.

Group 7 and 8 contributes 5.7 % and 5.22% respectively.
Group 6 and 9 contributed least to the whole number of cesarean sections that is 4.96%and 4.56% respectively

Table: 1

S no	The 10 groups of the Robson classification
Group 1	Nulliparous woman with a single cephalic pregnancy, >/=37 weeks gestation in spontaneous labour
Group2	Nulliparous woman with a single cephalic pregnancy, >/=37 weeks gestation who either had labour induced or were delivered by caesarean section before labour
Group 3	Multiparous women without a previous uterine scar with a single cephalic pregnancy, >/=37 weeks gestation in spontaneous labour
Group 4	Multiparous women without a previous uterine scar with a single cephalic pregnancy, >/=37 weeks gestation who either had labour induced or were delivered by caesarean section before labour
Group 5	All multiparous women with at least one previous uterine scar, with a single cephalic pregnancy, >/=37weeks gestation
Group 6	All nulliparous women with a single breech pregnancy
Group 7	All multiparous women with a single breech pregnancy, including women with a previous uterine scar
Group 8	All women with multiple pregnancies, including woman with a previous uterine scar
Group 9	All women with a single pregnancy with a transverse or oblique lie, including women with previous uterine scars
Group 10	All women with a single cephalic pregnancy < 37 weeks gestation, including women with previous uterine scar

Table 2: Different variables

Parity	• Nulliparous • Multipara
Previous scar	• Yes (one or more) • No
Number of fetuses	• Singleton • Multiple

Onset of labour	• Spontaneous • Induced • No labour (pre labour CS)
Gestational age	• Preterm (less than 37 weeks) • Term (37weeks)
Fetal lie and presentation	• Cephalic presentation • Breech presentation • Transverse lie

Table 3: Cesarean section rate and contribution by each group

Robson's Criteria	Total no of deliveries in each group	Total no of Cesarean in each group	Relative size of the group (%)	Cesarean section rate %	Contribution made by each group to total cesarean section rate %
Group 1	616	82	20.19	13.31%	10.70 %
Group 2	147	82	4.81	55.7%	10.70%
Group 3	1162	70	38.08	6.02%	9.13%
Group 4	219	141	7.17	64.38%	18.40%
Group 5	256	170	8.39	66.4%	22.19%
Group 6	67	38	2.19	56.7%	4.96%
Group 7	73	44	2.39	60.27%	5.74%
Group 8	141	40	4.62	28.36%	5.22%
Group 9	129	35	4.22	27.13%	4.56%
Group 10	241	64	7.89	26.55%	8.35%

Discussion:

In 2015, 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 them[12, 13,14].

The system classifies all women into one of 10 categories that are mutually exclusive and, as a set, totally comprehensive (table 1). The categories are based on 5 basic obstetric characteristics that are routinely collected in all maternities (parity, number of fetuses, previous caesarean section, onset of labour, gestational age, and fetal presentation) (table 2).

As we observed in the present study that rate of cesarean section in our hospital is 25% that is quite higher than what has been considered by WHO 15%. There was a gradual increase in cesarean section rate in Pakistan over the last 2 decade

The average cesarean section rate in Asian countries is 27.3% was much lower when compared with USA 31.1%.

Vogel et al analyzed the contribution of specific groups through robson classification system in 2 WHO multi country surveys and concluded that the proportion of women with previous caesarean section has increased along with the caesarean section rate in these women as we see in the present study as well[15].

Another study by Stavrou EP, et al analyzed that from 1998 to 2008 the CS rate in NSW increased from 19.1 to 29.5 per 100 births. There was a significant average annual increase in primary 4.3% (95%CI 3.0-5.7%) and repeat 4.8% (95% CI 3.9-5.7%) CS rates from 1998 to 2008. After adjusting for maternal and pregnancy factors, the increase in CS delivery over time was maintained. When examining CS rates classified according to the 10-group classification, the greatest contributors to the overall CS rate and the largest annual increases occurred among Nullipara at term having elective CS and multipara having elective repeat CS[16, 17,18].

In our study the results are comparable to this study as major contribution is done by group 5which is almost 22% (All multiparous women with at least one previous uterine scar, with a single cephalic pregnancy, >/=37weeks gestation).
It means that if the indications for primary section are not absolute like contracted pelvis, primi breach, or major placenta previa (type 3or 4) should be carefully analyzed and assessed.[19, 20,21,22]
Patients should be counseled for vaginal delivery and reassured that they can deliver virginally after previous scar.

After group 5 major contribution to the over all caesarian section rate is group 4 which is almost 18% in multiparous women without a previous uterine scar with a single cephalic pregnancy, >/=37 weeks gestation who either had labour induced or were delivered by caesarean section before labour. So this is need of time that injudicious use of inductions should be controlled and it should be strictly according to the standard protocol and guidelines. This will not only reduce the number of sections in nulliparous women but also decrease the sections in multiparous women with previous sections[23, 24].

Another trend which has increased tremendously over past few decade is maternal own request without ant medical indication for caesarian section as mentioned by Efty P Stavrou, etal that the increase may be related to differences in clinical decision making or maternal request[25, 26].

Future efforts to reduce the overall CS rate should be focused on reducing the primary CS rate.

Conclusion:

According to our analysis, which is comparable to all the other studies internationally available this, is the need of time to make the standardization of primary caesarian section indications and critically analyze the induction to decrease the overall caesarian sections. Women should be counseled and explained the benefits of vaginal delivery to decrease the tocophobia and number of sections done for maternal request and for non-medical indications.

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