Robson Criteria: An Emerging Concept

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Abstract

The rate of Caesarean section is increasing across the globe. To make valid global comparisons and to investigate the determinant of the rising trend of caesarean among different centers, there was need of an internationally acceptable and applicable system .Michael Robson, proposed Robson classification (also known as the Ten Group Classification System) to allow easy comparisons and thereby improvement in overall Obstetrics care. The easy applicability of this system makes it appropriate for worldwide use.

Keywords: Robson classification; Ten Group Classification System; Caesarean section rate

Abbreviations: CS: Caesarean Section; TGCS: Ten Group Classification System; WHO: World Health Organization; WHOGS: World Health Organization Global Survey; WHOMCS: World Health Organization Multi-country Survey; VBAC: Vaginal Birth after Caesarean

Introduction

"Every effort should be made to provide caesarean sections to women in need rather than striving to achieve a specific rate" WHO Statement (2015).

The caesarean section (CS) rate has been rising over last 5 decades. It has risen from 5% in 1940s and 1950s to 15% in 1970s and 1980s. But during last 2 decades there has been a dramatic rise in caesarean section rate worldwide which now exceeds 30% in some regions [1].

About thirty years back, World Health Organization issued a statement in a meeting of reproductive health experts held in 1985 at Fortaleza, Brazil that ,"there is no justification for caesarean delivery rate higher than 10-15% [2]".

But over these last 3 decades, there has been a clear evidence of benefits and risks of Caesarean section and marked improvements in the clinical obstetrics care outcomes have been observed. In view of this, there had been rising demand by the clinicians and health care policy makers to revisit the existing recommended rate proposed in 1985 [3].

To determine an adequate caesarean section rate was a challenge in absence of a reliable and internationally accepted classification to get the standardized data enabling a global comparison and investigation into the reasons for the upward trend of caesarean section rate.

Dr Michael Robson in 2001 proposed the need to adopt standard classification system for easy comparison and improvement of obstetrics care and introduced Robson classification to achieve this.

"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 all the relevant information."

Dr Michael Robson

Robson criteria (also known as Ten Group Classification System, TGCS) is a standard classification system of 10 mutually exclusive and totally comprehensive classification categories of Caesarean section.[4] This system stratifies women according to their obstetric characteristics thereby allowing a comparison of caesarean section rates with minimum confounding factors. The categories are based on five basic obstetric characteristics that are routinely collected at all obstetrics centre:

- Parity (nulliparous, multiparous with or without previous caesarean section)

- Onset of labour (spontaneous/induced or pre-labour Caesarean section)

- Gestational age (preterm or term)

- Presentation of fetus (cephalic, breech or transverse)

- Number of fetuses (single or multiple)

Based on this, there are 10 groups

GROUP 1-Nulliparous, singleton, cephalic, term, spontaneous labour

GROUP 2-Nulliparous, singleton, cephalic, term, induced labour or CS before labour

GROUP 3-Multiparous, singleton, cephalic, term, without a previous Caesarean section, Spontaneous labour

GROUP 4- Multiparous, singleton, cephalic, term, without a previous uterine scar, induced labour or by CS before labour

GROUP 5- Multiparous, singleton, cephalic, term with a previous caesarean section

GROUP 6- Nulliparous, singleton, breech

GROUP 7- Multiparous, singleton, breech

GROUP 8- Multiple pregnancy (twins or higher orders multiples)

GROUP 9- Singleton, transverse or oblique lie

GROUP 10-Singleton, cephalic, pre-term

This can be easily implemented across different countries, hospital and systems. The classification is simple, robust, reproducible, clinically relevant and prospective. Based on these few basic characteristics, every woman admitted for delivery can be immediately classified in one of the ten groups. This can allow inter-group and intra-group comparison and analysis.

As per WHO, Robson classification will help health care facilities to optimize caesarean section use, assess the effectiveness of strategies aiming at optimal use of caesarean sections, assess the quality of care and clinical management practices and assess the quality of data collected along with increasing awareness of the staff about the importance of data and its use.

In 2011, WHO recommended Robson classification as the most appropriate system to fulfill global and local needs? After 3 years, in 2014, a systematic review of users' experience with Robson classification was conducted by WHO to assess the pros and cons, implementation and interpretation barriers. A panel of experts in Geneva in October, 2014 convened by WHO, made certain recommendations.

- Every woman admitted for delivery must be categorized as per Robson classification despite the level of complexity.

- The 10 groups can be further divided to analyze other variables like epidemiological data, cost, outcomes or indications within each group.

- Wherever possible the results of the classification should be publicly available.

With this Robson Classification has been increasingly adopted recently in many countries like UK, Scandinavia and Canada. A modification to the Robson criteria has been proposed by SOGC Committee (Society of Obstetricians and Gynecologists of Canada) enable better comparison of Caesarean section rates. This modification includes sub-classification of women having caesarean section after spontaneous onset of labour, after induction of labour and before labour. But there have been limitations of this modification also. This classification doesn't allow analysis of Cesarean Section by demand and those for specific indications like placenta previa. Moreover it doesn't account for pre-existing medical, surgical condition or fetal distress, indications and methods for Induction of labour and degree of prematurity. Group 5 includes two different groups) those who planned or needed a repeat Cesarean section and 2) those who attempted VBAC and required Cesarean Section [5].

Indian Scenario

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In India, the rate of Caesarean Section Delivery has increased from 3% in 1992-1993 to 8% in 2015(World Health Statistics), which is lower compared to other developing countries like Brazil and China. India being the second most populous country, a small percentage increase affects a huge number of people. Although at national level CS rate is not alarming but the scenario is quite opposite at regional level. Kambo, et al. [6] analyzed data from 30 medical colleges and found that the CS rate has increased from 21.85 in 1993-1994 to 25.4% in 98-99. Sreevidya, et al. [7] have found that private sector deliveries had a higher odds ratio of a primary section delivery compared to the public sector.

Global Scenario

Vogel et al. analysed the contributions of specific obstetrics population to changes in Cesarean Section rates by using Robson classification in two WHO multi-country surveys of deliveries in 287 health care facilities in 21 countries across the globe [8]. These two multi-country surveys were WHO Global Survey of Maternal and Perinatal Health (WHOGS; 2004-2008) in Latin American, African and Asian countries and the WHO Multi-country Survey of Maternal and Newborn Health (WHOMCS; 2010-11). Within each country, a stratified, multistage, cluster sampling approach was used to obtain data of sample of deliveries which was analysed.

The countries were divided according to Human Development Index (HDI) group as very high/high, medium and low and Robson criteria was applied. The cesarean section rate increased overall between the two surveys from 26.4% in WHOGS to 31.2% in WHOMCS (p=0.003). Cesarean section rate increased across most Robson groups in all HDI categories. The proportion of women with previous section has increased in moderate and low HDI countries, along with the cesarean section rate in these women. Use of induction and pre-labour cesarean section and cesarean section after induction in multiparous women also increased. As the women with previous cesarean section are increasingly important determinant of overall rate, strategies to avoid the frequency of medically unnecessary primary cesarean sections is emphasized.

Target Reduction of CS Rates

Robson classification gives opportunity to identify the main contributor group and thus can help to formulate strategies to reduce the CS rate. It has been found through Robson[4] and other international studies [6-10] that Group 5(previous CS, term, singleton, cephalic) makes the largest contribution to the overall CS. For repeat CS, Robson group 5 is the main contributor. The best way to reduce the overall CS rate is by preventing the first CS. Whereas for Primary CS, Robson groups 1 & 2 are the main contributors. It is thus suggested that improved case selection for labour induction and pre-labour Cesarean section can also reduce Cesarean section rates. Implementation of evidence based strategies to avoid unnecessary sections and to encourage the safe and appropriate use of VBAC is the need of the hour.

Most likely causes of increase in this group are increases in maternal age and pre-pregnancy BMI, changes in Obstetrics practice like widespread use of electronic fetal monitoring, induction of labour, epidural anesthesia, reduces use of mid-cavity forceps, on demand CS and fear of litigation among care-givers .and there is need to cater the factors in order to reduce number in this group. VBAC and breech vaginal birth should be done wherever feasible and appropriate.

Conclusion

Robson classification is easily implementable and a robust tool for ongoing surveillance. The results can be compared between institutions, countries and regions. All hospitals and health authorities can use the Robson classification system as part of a quality improvement initiative to monitor Caesarean Section rates. It is suggested that this classification can be introduced as a routine tool to report the Caesarean delivery trends .Common classification of CS rates and indications allows evaluation and comparison of the contributors to the CS rate and their impact. The determination of the most important contributors for CS guides the health care providers about where to focus because reducing CS rates is difficult in presence of so many contributing factors. Results can be used to identify the target areas for interventions and resources to reduce CS.

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