ANALYSIS OF CAESAREAN SECTION RATE USING MODIFIED ROBSON’S CLASSIFICATION AT A TEACHING HOSPITAL.

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ABSTRACT:

BACKGROUND: The increasing trends for caesarean section are a concern both in India and the world over. The cause for this rise is multi-factorial for example: exponential advancement in technology leading to early identification of a compromised foetus, maternal preferences, previous history of caesarean section.

WHO recommends the widely accepted “Robson’s ten group classification system (TGCS)” for comparing and analysing CS rates across the globe.

METHOD: This is a ‘retrospective study’ conducted with the aim of analysing the rate of caesarean section in our institution which is a teaching hospital. Hospital records from 1/1/2019 to 30/6/2019 were used.

The 6 months data was entered and analysed using Excel sheet and presented using “Robson’s ten group classification system.”

RESULTS: Out of 746 women who delivered during the study period of 6 months, 390 (52.27 %) delivered by CS. Group 2 (induced labour/ C-section before labour) had the highest contribution with 35.13 %. Group 5 (previous CS) which came second, contributed 25.13 % to the total.

CONCLUSION: The outcome of this study indicates that Group 2 (induced labour or CS before labour) and “Group 5 (previous CS)” contributed the maximum to the overall rate of CS. “Trial of labour after caesarean (TOLAC)” and “Vaginal birth after caesarean (VBAC)” should be routinely done with close monitoring of both foetus and the mother. Our recommendation is to utilise this tool for watchful observation of CS rates and appropriate action to curb unnecessary, non-indicated C-sections.

Keywords: Robson’s criteria, caesarean section, parity, obstetrics, gestation

I. INTRODUCTION

In Obstetrics, “lower segment caesarean section (LSCS)” is undoubtedly the most regularly or frequently performed surgery world all over the world. The ideal rate for caesarean sections was considered 10-15 % by the healthcare community in 1985. (1) Worldwide, the caesarean section rate has been increasing steadily but surely since the past fifty odd years. (2) Over the last ten years, CSR has risen meteorically so much so that it has crossed 30 % in some regions of the world. (2) WHO guidelines, ‘The United States healthy people 2000 initiative ‘state that 15 % is the optimal/ ideal CSR. But this is not reflected in today’s scenario. (1, 3.)

In the year 2001, a novel classification system for caesarean section(CS) known as the “Ten-group classification System”(TGCS) or “Robson’s classification” was proposed. This system divides pregnant women into “ten mutually exclusive but comprehensive” groups.
This categorisation is with respect to parity, previous obstetric history, course of labour (including pre-labour CS), gestational age. (4.)

Analysing Caesarean section rates (CSR) such as primary versus repeat CS and their causation provide important points which will further help us to reduce the overall CSR.

The aim of the present study was to ascertain CS rates in our teaching hospital, IMS & SUM hospital, Bhubaneswar, SOA deemed to be university, Odisha and analyse the data based on the TGCS.

II. MATERIAL AND METHODS:

This was a retrospective study conducted using data of 6 months i.e from 1/1/2019 to 30/06/2019 in the Department of Obstetrics and Gynaecology, IMS & SUM hospital, SOA deemed to be university, Bhubaneswar, India. Medical records were retrieved and entered in a preformed structured performa.

Inclusion criteria

- Patients delivered by caesarean section during the given period (1/1/2019 to 30/6/2019) were recorded and classified according to ‘Robson’s 10 group classification system.’

- The parameters under consideration were:
  1. Parity index (with OR without previous CS)
  2. Gestational age (>37 OR <36 weeks)
  3. Fetal presentation (cephalic / breech / abnormal lie)
  4. Number of foetus (singleton / multiple)
  5. Onset of labor (spontaneous / induced / pre-labour caesarean section)

Exclusion criteria

- Term normal or instrumental vaginally delivered patients
- Preterm normal or instrumental vaginally delivered patients.

Data collected was entered into excel sheet analysed using statistical measures such as percentage and proportion.

III. RESULTS:

The total number of deliveries in the 6 month study period was 746. Of this, 390 were surgical deliveries by C-section (52.27%).

On data analysis we found that the maximum contribution (35.13 %) was by Group 2 i.e “nulliparous, singleton, cephalic, 37 weeks of gestation or more, induced labour or CS before labour.”

The next group with the 2nd highest contribution (25.13 %) was group 5- “multiparous, singleton, cephalic, 37 weeks period of gestation or more with previous history of CS.”
There was a 100 % CSR in group 9 (abnormal lie). All 4 out of 4 cases in this group were delivered by C-section.

Table – 1

<table>
<thead>
<tr>
<th>Modified Robson Group</th>
<th>Number of women in group</th>
<th>Relative size of group (%)</th>
<th>Number of CS in group</th>
<th>CS rate in group (%)</th>
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There was a 100 % CSR in group 9 (abnormal lie). All 4 out of 4 cases in this group were delivered by C-section.

Figure - 1

Number of women in group and Number of CS in group

Number of women in group

Number of CS in group

Modified Robson Group

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IV. DISCUSSION:

That there has been a great increase in the rates of C-Section in both developing as well as developed countries is a known fact. This raise has not happened overnight. (5, 6.) In our study the overall CSR was 52.27% which is much higher than the “ideal rate” of CS that was declared by the WHO. Studies have shown that when caesarean section rates rise up to 10% across a given population, the number of maternal and neonatal deaths decrease significantly. But, when this rate of CS goes above 10%, there is no considerable evidence to show or prove that mortality rates improve. (1.) This means the increase of C-section rates has been neither beneficial to the mother nor the newborn. In fact, it is increasing hospital-stay associated morbidities (hospital-acquired infections). Despite this, the rates in many countries are substantially higher. (7.)

On the behest of our study, standardisation and classification of caesarean deliveries was done in our Department conforming to ‘Robson’s criteria’. This was an attempt on our part to see which ‘clinically relevant groups’ contributed most to the caesarean deliveries conducted in our hospital. As we found in this study, the rate of cesarean section in our hospital (52.27%) is quite higher than what has been considered “ideal” by WHO (15%). The caesarean section rate depicted in year 2013-2014 in India was 16.4%. (8.) This rose to 18% in 2015-16 when a health survey was conducted by ‘Nation Family Health Survey’. The average caesarean rate in Asian countries (27.3%) was comparatively lesser when compared to that in USA (31.1%). (9, 10.)

Vogel et al conducted two ‘WHO multi-country surveys’ (21 countries) and reached the conclusion that the proportion of women with past history of previous caesarean section has increased as well as the incidence of repeat CS in these women. Women with surgical history of prior delivery by C-section are an “important determinant” of overall CSR (5.) This is reflected in our study as well.

The need of the hour is to limit induction of labor. We should critically evaluate the indication of the primary caesarean section. This will decrease the caesarean section in primigravida women and also lead to the eventual decrease in caesarean section in multigravida women with previous history of caesarean section. The hospital where this study was conducted is a teaching hospital and a tertiary care center where there is large influx of high-risk referral cases. This too contributes to the increased rate of CS. There is a rise in trend of cesarean section on maternal request as well.

We need to reduce the number of cesarean sections in primigravidae and make judicious use of “vaginal birth after caesarean section (VBAC)” after careful consideration of both maternal and foetal outcome and prognosis.
ACOG recently recommended clinical guidelines to restrict the number of medically non-indicated caesarean sections and induction of labor before 39 weeks of gestation. (11.) Efforts to reduce such births should include public awareness, reducing non-indicated induction before 39 weeks, forming, maintaining and following department protocols. Standardisation of indications for C-section deliveries, systematic methodical audits, definite, stringent protocols in the Obstetrics department will contribute significantly in curbing the caesarean section rate. The aim is to decrease the maternal morbidity associated with CS, reduce the duration of her hospital stay, decrease the expenditure and costs borne by the patient and her family.

Increasingly sedentary lifestyle, poor pain tolerance/ lesser threshold, heightened anxiety is added factors leading to the increase in CS as well. Yoga, brisk walking, healthy diets should be encouraged in pregnant women.

Our effort is directed not just to attain a certain statistical figure with respect to c-sections. Our aim is to lessen the clinically non-indicated C-sections. The ultimate goal is to have a healthy mother and a healthy baby. Keeping that in mind, evidence-based obstetrics should be practiced. To conclude, C-section should be provided to every woman in need and this cannot be compromised to achieve a ‘specific ideal rate.’

V. CONCLUSION:

The outcome of this study indicates that “Group 2 (induced labor or caesarean section before labor)” and “Group 5 (previous CS)” contributed the maximum to the overall CS rate. “Trial of labor after caesarean (TOLAC)” and “Vaginal birth after caesarean (VBAC)” should be routinely done with close monitoring of both foetus and the mother. There should be department protocols for induction of labor which should be followed strictly so that there is judicious use of induction. Strict implementation of “induction protocols” will lead to decrease in the number of failed inductions and eventually reduce the primary CS. It is advisable to use Robson’s TGCS continually so that there is a sense of accountability. Our recommendation is to utilise this tool for watchful observation of CS rates and appropriate action to curb unnecessary, non-indicated C-sections.

REFERENCES