

Increasing Caesarean Rates: Analysis of Indications and Possible Interventions

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Abstract

Background: The alarming increase in caesarean section rates worldwide has led to a shift of focus to caesarean section rates and indications for caesarean section. The main objective of the study was to analyse the indications for caesarean section with the aim of finding viable interventions which could help decrease the caesarean rates. **Methods:** A retrospective study from 1st January 2017 to 31st December 2017 was conducted in which we analysed patient records of those delivering in unit III of our institute. Analysis of patient records was done and indication for caesarean was analysed. **Results:** A total of 496 women delivered in our unit in 2017, of these, 303 (61.09%) had a vaginal delivery and 193 (38.91%) had caesarean section. 108 patients (21.77%) had a history of at least one previous caesarean section and of these 94 (87.03%) underwent a repeat caesarean section. The primary caesarean section rate was 25.51%. Section was done for breech presentation in eleven primigravidae (5.7% of sections) and in fifteen multigravidae (7.77% of sections) including those with a previous section. Four patients had multiple pregnancy (2.04% of all sections). Eleven patients had a preterm section (5.7% of sections). **Conclusion:** In order to decrease caesarean rates the group that requires most focus is those in whom a primary section is being done. Few patients who have undergone at least one prior surgery are willing to take the risk inherent to a trial of labour (TOLAC). Classification and reporting of caesarean section according to the Robson ten point criteria will help in a better understanding of the indication, comparison and auditing and help to establish guidelines that can help decrease the caesarean rates.

Keywords: Caesarean Section, Classification, Labour, Pregnancy, Primary

1. Introduction

The worldwide trend of increasing caesarean section rates has led to a lot of debate on indications, classifications and on the need for audit. Since the 1985 Fortaleza WHO meeting, caesarean section rate of 10-15 % was taken to be a population based acceptable limit. The rates at maternity units, referral centres and at private institutes^[1] is seen to have a large variation based on their population base, high-risk unit and institute practice and guidelines. The WHO carried out various studies to ascertain the acceptable section rates and issued a statement that although acceptable general population rates have not changed, there is a need to streamline the documentation and analysis of data received from maternity units^[2].

They observed that beyond 10% there was no benefit of section in reducing the mortality rate in both maternal and neonatal population. They suggested audits of the caesarean section performed at each maternity unit and advised on making this information public.

Many studies have been conducted to evaluate various causes for this increase. They have cited various reasons such as changes in patient acceptability of labour (patient preference), financial advantages, unscrupulous practice, fear of litigation and even decrease in “the dying art of vaginal delivery”^[3]. Studies in India too have shown a rise in caesarean section rates, with an average rate of C-section in India of 17.2 percent, ranging from 5.8 percent in Nagaland to 58.0 percent in Telangana (Table 1)^[4].

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Table 1. Statewise caesarean section in India^[5]

States/Country	Percentage of women who have caesarean delivery		Gap between Private and Public Institutions
	Public Institutions	Private Institutions	
Andhra Pradesh	23.7	55.2	31.5
Assam	12.9	53.3	40.4
Bihar	2.6	31.0	28.4
Chhatisgarh	5.7	48.6	42.9
Delhi NCT	21.0	42.9	21.9
Gujarat	10.8	26.6	15.8
Haryana	8.6	25.3	16.7
Jammu & Kashmir	35.1	75.5	40.4
Jharkhand	4.6	39.5	34.9
Karnataka	16.9	40.3	23.4
Kerala	31.4	38.6	7.2
Maharashtra	13.1	33.1	20.0
Madhya Pradesh	5.8	40.8	35
Odisha	11.5	53.7	42.2
Punjab	17.8	39.7	21.9
Rajasthan	6.1	23.2	17.1
Tamil Nadu	26.3	51.3	25.0
Telangana	39.5	75.1	35.6
Uttar Pradesh	4.9	31.3	26.4
Uttarakhand	9.3	36.4	27.1
West Bengal	18.8	70.9	52.1
India	11.9	40.9	29.0

This wide variation is a cause for concern not only because it is a reflection of poor audit and lack of national guidelines, but also because it is putting as many women at risk. The morbidity and mortality is higher with a caesarean section (if not strongly medically indicated) which is an established fact, but also, these patients may not avail proper health care in a subsequent pregnancy putting the lives of both mother and child at risk. In addition, repeat caesarean sections are associated with higher morbidity/mortality rates including associations with placenta accreta/increta^[3]. The need is to establish proper reporting systems and an effective internal audit correct internal audit to rectify this. It has been shown that simply conducting an internal audit leads to a change in caesarean section rates^[6].

This study was conducted to assess the indication for caesarean performed in our institute to assess where we stand, the target populations and the interventions that

can be applied to them in order to decrease the caesarean rate further.

2. Methods

To calculate the caesarean section rate and the various indications, data was collected in a retrospective manner from patient records and operation notes. We included all women who delivered in unit III of our institute from 1st January 2017 to 31st December 2017 who were greater than 28 weeks period of gestation.

Total, primary and repeat caesarean section rates were calculated. Primary caesarean was defined as first caesarean section in a patient irrespective of parity. Repeat caesarean section was defined as caesarean section in a patient who had undergone at least one prior section. Term pregnancy was taken as more than 37 weeks. Preterm was taken as between 28 and 37 weeks gestation.

3. Results

The total number of women who gave birth during 2017 in our unit was 496, of which, 303 patients had a vaginal delivery (61.09%) and 193 underwent a caesarean section (38.91%).

Of the patients undergoing a section, 76 patients (39.37% of total sections) were primigravidae and of the remaining 117 patients, only 23 patients were multi gravida with a primary section (11.91% of all sections) (Table 2).

Table 2. Primary section

Gravida	Number of patients	Caesarean section	Caesarean rate
Primigravida	248	76	30.64%
Multigravida without scarred uterus	140	23	16.42%
Total	388	99	25.51%

76 (15.3% of all deliveries) cases were primary caesarean section in primigravidae and 23 (4.63% of all deliveries) were primary section in parous women.

108 patients (21.77%) had a history of at least one previous caesarean section and of these 94 (87.03%) underwent a repeat caesarean section (Table 3).

Table 3. Primary vs repeat caesarean rates

Type of cs	Total	Caesarean section	Caesarean rate
Primary section	388	99	25.51%
Repeat section	108	94	87.03%

Total 108 patients (21.9% of all deliveries) had a history of at least one previous caesarean section. Of these, 12 patients (2.43% of all deliveries) had previous 2 or more caesarean section and were not offered VBAC as practice protocol. 16 patients with previous 1 caesarean were not offered trial of labour (TOLAC) in view of malpresentation, placenta previa or other contraindications to TOLAC. Of the remaining 80 patients, 42(52.5%) did not agree to a TOLAC. 38 patients agreed for TOLAC and of these, 14 (36.84%) had a successful vaginal birth (VBAC). Various studies have compared the criteria for attaining successful VBAC but the acceptability varies considerably from region to region and there is a worldwide decrease in the percentage of women willing to attempt a TOLAC.

Section was done for breech presentation in eleven primigravidae (5.7% of sections) and in fifteen

multigravidae (7.77% of sections) including those with a previous section (Robson groups 6&7). Four patients had multiple pregnancy (2.04% of all sections) i.e., Robson group 8. Eleven patients had a preterm section (5.7% of sections) i.e., Robson group 10.

4. Discussion

The caesarean section rate in our study was 38.91% which is comparable to that seen in other studies in tertiary referral institutes^{[6],[7]}.

Table 4. Caesarean rates in PIMS and other studies^[7]

Institute/region	Caesarean section rates	Study
Pims/unit III	38.91	Present study
PGI	32%	Gainder S et al
Jaipur	32.46	Gupta M
Agroha	51.1	G Singh et al
Visakhapatnam	25.66	R Subhashini et al
Vadodara	28.87	Yadav RG
Vallah Amritsar	33.2	Preetkamal et al
East Delhi	34.4	Bhasin SK et al

76 (15.3% section (Table 3). of all deliveries) cases were primary caesarean section in primigravidae and 23 (4.63% of all deliveries) were primary section in parous women. This is similar to the study by G sharmila et al who demonstrated incidence of primary caesarean section in parous women is 3% of all deliveries and accounted for 10.1% of all sections done^[8].

Out of total 193 sections performed, 99 (51.3%) were primary sections which is lower than that reported by Gupta M et al who had an overall section rate of 31.46% out of which 63.48% were primary sections. In our study 76 sections (39.37% of sections) were performed in primigravidae while in their study, 46.18 % of sections were performed in primigravidae^[7].

Patients who have already undergone at least one previous caesarean section are forming a gradually increasing group due to the increase in caesarean section rates. This shows that the biggest difference that can be made in bringing down total caesarean rates is by decreasing the primary caesarean rate. We did not divide our patients (who had a primary caesarean) based on whether they were in labour, induced or underwent caesarean before the onset of labour i.e. Robson groups

1-4. Proper documentation in this group is very important in order to allow transparency and accountability. It is these groups which are the main focus of all interventions including the recent WHO recommendations. Changes, such as the change in ACOG guidelines now stating active labour only after 6cm dilatation, are aimed at these very groups.

A workshop was also conducted in joint effort in order to analyse various such interventions that can help reduce the primary caesarean section rate. It is imperative that such protocols be put into practice so that the overall section rate can be brought down which requires universal involvement.

5. Conclusion

Acceptability and tolerance of labour pains is decreasing rapidly among modern women with many patients not willing to go through labour and many more opting for a caesarean section the moment labour gets established. In low resource setting such as in a developing country like India, there is limited access to procedures such as epidural analgesia which help make labour more tolerable. The patients in active labour and their relatives often put pressure on the attending obstetrician to perform a caesarean section rather than take the “risk” of labour and vaginal delivery. The management of a patient in labour is often akin to a high risk surgical procedure with the sword of litigation forever looming near.

Primigravidas in particular should have access to low cost, easily available pain relief which does not depend on interventions like epidural which depend on specialist availability. Appropriate counselling of what happens during labour will help diminish the apprehension and fear that comes with the thought of labour pains. Such interventions will help increase acceptability of labour in these patients and decrease caesarean section rates. The focus has to be on preventing primary caesarean sections as this is the intervention which can most effectively decrease caesarean section rates in the long run.

The reasons why a caesarean section is preferred over labour by patients and their doctors needs proper evaluation although it has often been attributed to “non-evidence-based indications, professional convenience,

maternal request, and over-mediatisation of childbirth”. Caesarean section rates above 15% are not associated with an improvement in maternal or fetal morbidity or mortality. The health care providers are often assailed and maligned for preferring a caesarean section for monetary gains and time-optimisation without mentioning about either the intolerance of labour by patients and their relatives or the fact that they prefer the quick caesarean over the patience of going through induction and are not willing to take even the slightest “risk” associated with vaginal delivery. Amongst the different branches, obstetricians everywhere face the highest litigation rates. We need standardised national guidelines and implementation of the WHO recommendation for Robson classification so that labour protocols and curbing of caesarean rates can be effectively established.

6. References

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How to cite this article: Kaur S. Increasing Caesarean Rates: Analysis of Indications and Possible Interventions. *Int. J. Med. Dent. Sci.* 2018; 7(2):1663-1666.