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Original Research Article

Rising trend in cesarean sections: a retrospective study at tertiary care hospital in Jammu

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ABSTRACT

Background: The uncontrolled wave of cesarean rates has increased globally which has resulted in a significant amount of maternal mortality and morbidity. The present study aims to evaluate the trend in cesarean section rates in Jammu, India.

Methods: The present retrospective study was carried out at the department of Obstetrics and Gynecology, SMGS Hospital, Jammu, India. We collected data based on total number of deliveries and cesarean sections performed at the hospital during (March 2015-Feb 2020) along with indications for CS.

Results: The percentage of cesarean sections has increased drastically from 39.4% during (2015-16) to 49.9% in (2019-20). The study shows that the most common indication for CS is post CS followed by NPOL, Fetal distress, breech, APH, CPD, PIH and others.

Conclusions: There is a growing concern among public and health care providers regarding the escalating and uncontrolled trend of cesarean sections which needs to be curtailed within optimal limits recommended by WHO.

Keywords: Cesarean, Deliveries, Indications

INTRODUCTION

From the last few decades there has been a growing trend in cesarean section rates both in developed and under developed countries. With the steadily increase in both primary and repeated cesarean birth rates, the public in particular health care providers are facing a challenging situation.¹⁻³ In England, France, Sweden and twelve Latin American countries the cesarean section rates are above 15% with highest 40%.⁴⁻⁷

Countries like Brazil, Iran and Mexico reported CS rates 85.6%, 85.8% and 92% respectively.^{8,9} The World Health Organization suggested that CS rates should not be ideally higher than 10% to 15%.¹⁰

In India, ICMR conducted a study in 1980 and reported that in teaching hospitals the CS rate is touching to 14%. On comparing the data from 30 teaching

hospitals/medical colleges between (1993-94) and (1998-99) there has been an escalating trend with an increase from 21.8% to 25.4%.¹¹

What was worth to note that 42.4% were primigravidas and 31% were from rural areas? One of the studies over two period of years in an urban area of India reported that CS rates corresponding to public and charitable sectors were 20 and 38% respectively, for private sectors the rate was around 47%.¹²

The data collected by National Family Health Survey during (1992-93), (1998-99), (2005-06) and (2015-16) shows that CS rates are exhibiting increasing trend.

The CS rate of India during (1992-93) was 2.9% which is now 17.2% at present which clearly unfolds its escalating trend and it is evident that it has increased manifold in the last two decades.

Table 1: Percentage of women who had undergone caesarean section from NFHS-1(1992-93), NFHS-2 (1998-99), NFHS-3 (2005-06) and NFHS-4 (2015-16).13-16.

State/ Country	NFHS-1 (1992-93)	NFHS-2 (198-99)	NFHS-3 (2005-06)	NFHS-4 (2015-16)
India	2.9	7.1	10.6	17.2
Jammu and Kashmir	5.7	10.6	14.1	33.1
Delhi	4.6	13.4	12.0	23.7
Himachal Pradesh	1.6	6.8	13.1	16.7
Haryana	2.3	4.2	5.0	11.7
Punjab	4.2	8.3	14.4	24.6
Utter Pradesh	0.6	2.7	5.9	9.4
Maharashtra	3.4	9.9	15.6	20.1
Karnataka	3.7	11.0	15.3	23.6
Bihar	1.1	3.0	4.1	6.2
Rajasthan	0.7	3.0	4.2	8.6
Goa	13.7	20.0	25.7	31.4

From the Table 1, we observe that every state shows an increment in CS rates from (1992-2016) wherein Jammu and Kashmir displays a highest spike in it. Because of lack proper standard classification system for indications of CS, different institutions report different indications for CS.¹⁷⁻¹⁹

Still in general, indications have been classified interns of medical and non-medical reasons. Fetal distress, especially by its constant monitoring through electronic systems, breech presentation, abdominal delivery of growth-retarded infant, increased maternal body mass, placenta previa, prematurity, multiple gestation, previous CS, failure to progress for labor pain are some medical indications of CS.²⁰⁻²¹

On the other hand, non-medical indications include maternal request for elective CS delivery, the percentage of which ranges from 0.3% to 14% worldwide.²²Cultural ethos, for instance, in China the baby's delivery date is chosen as per the future luck of baby, fear of pain and genital modifications after vaginal delivery, easy for health care professionals and mother, profit interests among health care providers may alter the decision making which in turn leads to more cesarean deliveries.²³⁻²⁵

Other non-medical factors that motivate patients for cesarean deliveries include the fear among patients of not finding their own consultant on right time, fear from suffering long labor, defensive approach of obstetricians to avoid any negligence claims. Aim of our study was to study the rising trend of cesarean sections in our hospital.

METHODS

This is a retrospective study carried out at the department of Obstetrics and Gynaecology, SMGS Hospital, Jammu, India. We collected a data based on total number of

deliveries and cesarean sections performed at the hospital during (March2015-Feb2020).

Inclusion criteria

All the patients who underwent for CS during the study period were included in the study. Vaginal deliveries, instrumental deliveries, indications for CS were also collected from record section of the hospital. Other information vital for the indication of CS was included in the study while as less or rare information were omitted.

Exclusion criteria

Patients refusing to take part in the study. All statistical calculations were done using SPSS (statistical package for the social science) SPSS 17 version statistical program for Microsoft Windows. Results were tabulated.

RESULTS

In this section we shall present some important results pertaining to total no. of deliveries and cesarean sections year wise and indications for CS in a compact tabular form. Maximum patients in our study belonged to age group 21-30 years (Table 2).

Table 2: Demographic profile (age).

Age group	Percentage
<20	3.2
21-30	68
31-40	26.1
>40	2.7
Total	100

From the Table 3, we observe year wise distribution of total deliveries and cesarean sections performed at the hospital. It is evident that annual no. of deliveries

increased from 18659 to 27921, the percentage of cesarean sections has increased drastically from 39.4%

during (2015-16) to 49.9% in (2019-20), the biggest spike in annual percentage of CS was observed in (2018-19).

Table 3: Total deliveries and caesarean section rate from 2015-2020.

Year	Total deliveries	Cesarean section	Percentage
2015-16	18659	7356	39.4
2016-17	20097	8095	40.3
2017-18	22725	9569	42.1
2018-19	25812	11921	46.2
2019-20	27921	13920	49.9

Table 4: Commonest indications of caesarean section, their frequency and percentage distribution.

Indication	Year				
	2015-16	2016-17	2017-18	2018-19	2019-20
Post CS	2036 (27.7%)	2884 (35.6%)	3481 (36.4%)	4455 (37.4%)	4863 (34.9%)
NPOL	1327 (18.0%)	1641 (20.3%)	2098 (21.9%)	2294 (19.2%)	2584 (18.6%)
Fetal Distress	983 (13.4%)	1052 (13.0%)	1051 (11.0%)	1102 (9.2%)	1786 (12.8%)
Breech	931 (12.7%)	831 (10.3%)	927 (9.7%)	1653 (13.9%)	1302 (9.4%)
APH	811 (11.0%)	583 (7.2%)	697 (7.3%)	1195 (10.0%)	1507 (10.8%)
CPD	368 (5.0%)	419 (5.2%)	614 (6.4%)	379 (3.2%)	690 (5.0%)
PIH	353 (4.8%)	273 (3.4%)	463 (4.8%)	631 (5.3%)	1015 (7.3%)
Others	547 (7.4%)	412 (5.1%)	238 (2.5%)	212 (1.8%)	173 (1.2%)
Total	7356	8095	9569	11921	13920

Table 4, discusses various types of indications of CS, we observe that the most common indication for CS is Post CS followed by NPOL, Fetal distress, Breech, APH, CPD, PIH and others.

The percentage of post CS indication of cesarean section increases from 27.7% during (2015-16) to 37.4% in (2018-19) and then drops to 34.4% in (2019-20). The percentage of other indications of CS remains fluctuating with no significant percent increment or decrement during the study period

DISCUSSION

In the present study, the CS rate has dramatically increased from 39.4% to almost 50% (10.5% hike) which clearly shows an escalating trend. From Table 1, we observe that as per the NFHS-3, the CS rate in India was 10.6% which lies within allowable limits of (10-15) percent recommended by WHO.

However, onwards from 2015, there has been a rising trend in CS much beyond recommended level, NFHS-4 reports 17.2% of CS in India during (2015-16). As per NFHS-2, J&K had a stable CS percentage of 10.6 during (1998-99), thereafter it has witnessed an elevated growth of CS rates and reached to 33.1% during (2015-16), NFHS-4. In Jammu CS rate has reached to 49.9% from 39.4%, an increment of 10.5% in five years which is almost same increment of 8.01% reported by Qazi et al.²⁶

In our study we have observed that most common indication of CS as post CS constituting between (27.7-34.9) percent of indications followed by NPOL accounting for (18-21.9) percent of indications.

Rest of the indications of CS in terms of decreasing percentage order were fetal distress, breech, APH, CPD and PIH. Other studies due to Barber et al, Stasieluk et al, Kolas et al and Qazi et al have also reported post CS followed by NPOL, as most common indication of CS.²⁶⁻²⁹

However, studies conducted by WHO in nine Asian countries reported that most common indication of CS are previous CS accounting (24.2%), CPD (22.66%), fetal distress (20.5%), breech along with other abnormalities (12.5%).¹

It was also reported in the survey that operative vaginal delivery and all types of CS were significantly linked with elevated risk of maternal mortality and morbidity in comparison to normal vaginal deliveries. One of the significant reason for rise in CS in post CS group was the denial of consent for labor much similar to what other studies due to Brber et al and Stasieluk et al reported.^{27,28}

However, Mackenzie et al have reported that it is maternal request which is most common indication for CS constituting around (23%) while as Nazneen et al reported only (8%) indications for CS constitute maternal request.^{30,31} But we do not find maternal request

indication for CS to be of much importance in the present study.

CONCLUSION

There is a growing concern among public and health care providers regarding the escalating and uncontrolled trend of cesarean sections, the reasons for this are multifaceted that include both medical indications and non-medical reasons that have been already highlighted in this study. The present rate of CS in Jammu is almost (50%) which is way beyond the allowable limit of (10- 15) % proposed by WHO for its optimal use.

However, the logical and responsible diminution of CS is not a short and straight forward task; it will consume lots of time and efforts. In order to minimize and limit this uncontrolled wave of CS ethically within recommended levels, multiple efforts are needed that include establishment of counseling cells for mothers at gross root level that encourage them for vaginal deliveries, development of policies to ensure optimal use of CS which is possible by closely monitoring CS rates along with fetomaternal outcomes, evaluating medical indications leading to CS in an unbiased and careful manner, improving labor analgesia, remaining ethically bound for optimal patient benefits rather than self-profitability.

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