Journal of
Indian Academy of Obstetrics & Gynaecology

December 2017
Vol. 1, Issue 1

Original Article

IMPACT OF GLOBAL EPIDEMIC OF CAESAREAN SECTION IN A DISTRICT MEDICAL COLLEGE OF WEST BENGAL: AN OBSERVATIONAL STUDY

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ABSTRACT

Background: In developing countries, increasing use of medical technologies during childbirth is now the matter of keen interest. Though the application of reproductive technologies has significantly improved clinical obstetric care but this has generated unintended health issues for women and increased costs to family and eventually nation. According to the latest data from 150 countries, currently 18.6% of all births occur by CS. In 2010 in India, the incidence was around 8.5% but a phenomenal increase of 40 % was seen in Kerala and Tamil Nadu. Keeping in view the above facts, the present study tries to explore the trends of caesarean section delivery in College of Medicine & JNM Hospital, Nadia West Bengal (the only tertiary care hospital in this predominantly rural district) and its comparison with the state and national data.

Methods: Over a study period of Oct 2016-Sept 2017 the rate of caesarean section was obtained from COM JNM Hospital Nadia, West Bengal and comparison was made with the latest available national and regional data.

Results: Our study over the period of Oct 2016-Sept 2017 in College of Medicine & JNM Hospital found CS rate increased annually from 34.4% (October 2016) - 41.1% (September 2017) which is quite high among whole Nadia District (15%) and West Bengal (18.2).

Conclusion: The high CS rate can be accounted to the fact that this is the only tertiary referral centre in the district, however due consideration has to be given to reduce the rate to some extent.

Key words: CS on demand, CS rate, Nadia, NFHS, West Bengal

INTRODUCTION

In developed and developing countries, including India, increasing use of medical technologies during childbirth is now the matter of keen interest. Though the development and application of reproductive technologies have significantly improved clinical obstetric care but this phenomenon can generate unintended health issues for women. With the increasing numbers of institutionalised births in

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Received: 30 October 2017
Accepted: 17 November 2017
Published online: 1 December 2017
Citation: Chowdhury S, Roy Chowdhury R, Pal M. Impact of global epidemic of cesarean section in a district medical college of West Bengal: an observational study. J Indian Acad Obstet Gynecol 2017; 1(1): 24-28

India, the trend of caesarean delivery is also sharply rising. Obstetricians, Government and social scientists worldwide are concerned of this enigmatic rise because of the lack of consensus on the appropriate CS rate and the associated additionalshort and long-term risks and costs to family and eventually nation. In 2008, the cost of the global excess/unnecessary

C-section delivery was estimated approximately 2.32 billion US dollar.[1] Rapid increase of CS rate throughout the world has become a serious public health issue because several studies have found that the high rate of caesarean section does not necessarily contribute to an improved maternal health and pregnancy outcome. We present here the latest CS rates and trends over 1year among global, national and regional estimates. According to the latest data from 150 countries, 18.6% of total births are performed by CS. Latin America and the Caribbean region have the highest CS rates (40.5%), followed by Northern America (32.3%), Oceania (31.1%), Europe (25%), Asia (19.2%) and Africa (7.3 %).[2]

Caesarean section rate varies in different places depending on type of caregiver and type of facility. In the last decade, the rate has increased by almost double.

Proportion of CS to the total births is considered as one of the important indicators of emergency obstetric care (World Health Organization, 2009).[3]

In developing countries like India too many women are undergoing caesarean section. This trend is rising in urban as well as in rural population of India. In 2010, the incidence was around 8.5% but a phenomenal increase to a level of 40 % was seen in Kerala and Tamil Nadu.4 A substantial proportion of this increase was due to unnecessary operations attributable to non-evidencebased indications, professional convenience, maternal request, and over enthusiastic media propaganda of childbirth by CS. Based on the presentations in the conference and a systematic review of literature, the conference panel stated that though there was lack of sufficient evidences to evaluate fully the benefits and risks of planned caesarean delivery over planned vaginal delivery, the following outcomes were supported by at least some evidences. Compared to planned vaginal delivery and unplanned CS, planned caesarean delivery was associated with:

(1) A lesser risk of postpartum haemorrhage and stress urinary incontinence,
(2) An increased risk of infection, anaesthetic complications and placenta previa,
(3) Greater complications in subsequent pregnancies,
(4) Longer hospital stay of mothers and neonates,
(5) Higher risk of respiratory morbidity for infants and
(6) A lower rate of foetal mortality, birth injury, neonatal asphyxia and encephalopathy.[5]

The increasing trend of CS has generated much controversy regarding the causes of such tendency. The factors which are responsible for this trend include increased institutional deliveries, inadequate use of electronic foetal monitoring devices, inadequate care and apprehension of patients as well as doctors, importuning family and social pressure, clinical status. Risinglitigation, insurance, preterm caesarean section to salvage the premature babies in an era of modern NICU facility & doctor's anxiety and apprehension are to a large extent responsible for increasing number of operative deliveries

Keeping in view the above facts, the present paper tried to explore:

1. The levels and trends of caesarean section delivery in College of Medicine & J.N.M Hospital, WBUHS, Kalyani, Nadia, West Bengal (the only tertiary care hospital in this predominantly rural district) and its comparison with the state and national data.
2. To update previously published estimates, present the latest data on CS rates nationwide and to modify obstetricians view on performing caesarean delivery.

MATERIALS & METHODS

The data about the rates of CS was obtained primarily from three sources:

i) Representative nationwide surveys, ii) routine vital statistics, and iii) reports from health authorities. The data available from our hospital (College of Medicine & J.N.M Hospital, WBUHS, Kalyani, Nadia, West Bengal) were compared with the latest available global and regional rates of CS.

RESULTS

On analysis of the data of one year it was found that the caesarean section rate as increase from 34.4% (October 2016) to 38.4% (September 2017) with a peak in June 2017, 46.1% (Table 1).

Table 1: Total percentage of caesarean section performed from a period of October 2016 to September 2017 in COM & JNM Hospital, Kalyani

Month (October 2016 To September 2017)	Total Deliveries	Caesarean Deliveries	Percentage
October	710	244	34.4
November	677	221	32.6
December	748	259	34.6
January	623	201	32.3
February	620	227	36.6
March	623	248	39.8
April	608	235	38.6
May	598	264	44.1
June	583	269	46.1
July	641	279	43.5
August	765	299	39.1
September	762	313	41.1
TOTAL (in 12 months)	7958	3059	38.4

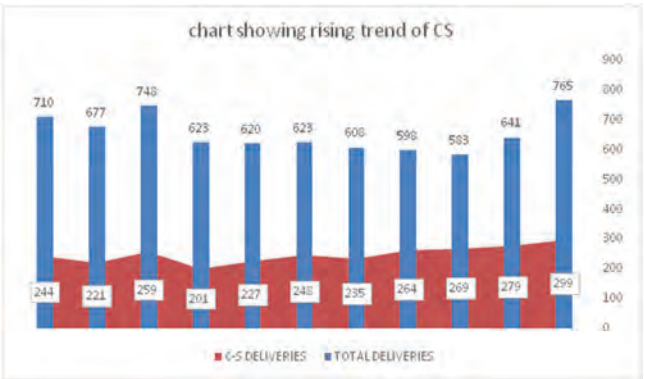

Fig. 1: Incidence of caesarean section over total deliveries from October 2016 to September 2017 in College of Medicine & J.N.M Hospital, WBUHS, Kalyani, Nadia, West Bengal

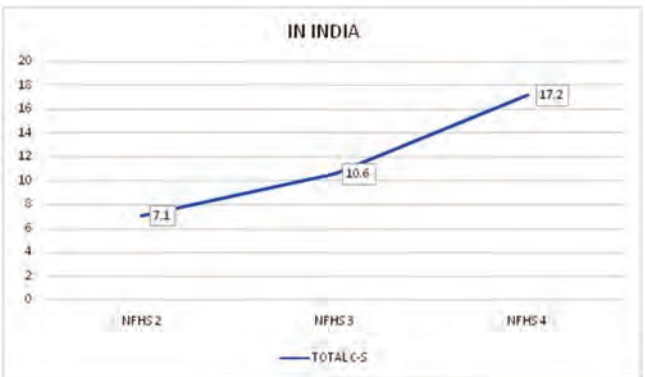

Fig. 2: Graph showing rising trend (In Percentage) of Caesarean Section in India (From 1998 to 2017 based on NFHS data)[6,7,8]

Caesarean section rate was compared between national, state and district level. It was found that as per NFHS 4 Nadia District's caesarean section rate has been increased to 16.9% from 11.8% (NFHS 3) (Table 2).

Table 2 Increasing rates of Caesarean Section in India, West Bengal and Nadia District (Based on NFHS 3, NFHS 4, DLHS 3 and DLHS 4 Data)[7,8,9,10]

Percentage of C-S among total Institutional Deliveries			
Based on Survey	India	West Bengal	Nadia
NFHS and DLHS 3	10.6	16.6	11.8
NFHS and DLHS 4	17.2	18.8	15.9

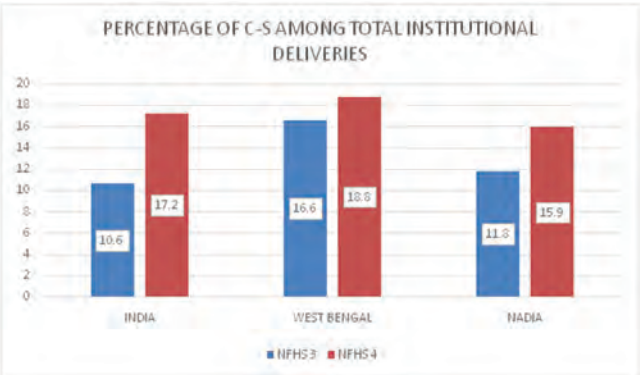

Fig. 3: Percentage of caesarean section among total institutional deliveries

DISCUSSION

Most of the Caesarean Sections (CS) are currently performed keeping the benefit of the fetus in mind not that of the mother. Changes in maternal characteristics and individual practice styles, increasing tendency of malpractice, profit-oriented attitudes, fear of litigation, social and cultural attributes and sometimes pressure from the families, have all been attributed in this increasing trend. In India, the rate of caesarean section delivery has increased by a whopping 10% in 10 years from 7.1% (NFHS 2 1998) to 17.2% (NFHS 4 2016-17).[6,8] However, this is much lower compared to some developing nations like Brazil and China. But as India is the second most populous country in the world, even a small increase in the incidence pose a huge impact on the vital statistics and health infrastructures. If the 1985 guidelines of WHO (as in 2009 WHO stated that 'optimum rate is unknown' and world regions might want to continue to use a range of 5-15% or set their own standard), are followed it will be noticed that at national level the present rate of CS does not appear to be that alarming but at regional level the scenario is quite different. Our study over one year from Oct 2016 to Sept 2017 in College of Medicine & JNM Hospital has revealed that CS rate has increased from

34.4 to 41.1%, which is quite high compared to that of whole Nadia District (15.9%)and West Bengal (18.8%) statistics. This can be accounted for by the fact that there is individual institution specific rate at many places and more importantly it is the only tertiary referral centre in the entire district. Using the data of National Family Health Survey (NFHS) India, 1992-93, Mishra and Ramanathan (2002) found that among 18 large states, two states(Goa and Kerala) had CS rate near 15 per cent whereas the rest of the states had less than 5 per cent.[11] On the contrary, data from a large teaching hospital in Kolkata revealed that between 1990 and 1995, of all deliveries, caesarean deliveries were done in 50 per cent cases.[12] Another study analyzing the data of 30 medical colleges found that the rate of CS increased from 21.8 percent (1993-94) to 25.4 per cent in 1998-99.[13] Another study revealed that in Madras city (Chennai), between June 1997 and May 1999, the CS rate was 32.6 per cent.[14] They also found that private sector deliveries had a higher odds ratio of a primary C-section delivery in comparison to public sector after covariate adjustment. Similar findings have beenobserved in several other studies.[15]

The proponents of CS claim that CS is an extremely safe operation with a negligible mortality and morbidity. But on the contrary, elective CS had a 2.84 fold greater chance of maternal death as compared to vaginal birth.[16] So CS-on-demand threatens national resources, and is an expensive and dangerous luxury. Obstetricians should abide by ethics in clinical practice and carefully evaluate the indication in every CS and take an unbiased decision before performing CS-on-demand/request. Actually, inadequately informed women choose CS to avoid painful natural childbirth who should be given proper preparatory knowledge of childbirth during antenatal check-up by trained health care provider and professional groups.

A trial for vaginal birth after a previous CS (VBAC) is considered safer than a routine repeat CS. But, it is unfortunate that there is currently less enthusiasm for VBAC by trial of scar or of labor. It is evident that whereas CS is doctor friendly but VBAC is not. RCOG recommends that all women, previously delivered by one lower segment CS, should be offered an opportunity to vaginal delivery during their subsequent pregnancy by promoting a trial of scar or of labor. Carefully supervised vaginal delivery after CS needs to be enthusiastically encouraged by promoting trial of scar or trial of labor.[11]

Routine practice of external cephalic version is recommended during antenatal period in selected cases of breech presentation.

The question of seeking a second opinion from a senior and experienced obstetrician before performing a CS for a controversial indication is debatable but may be seriously considered or debated in the best interest of the profession and of the women as well. The prevalent practice of "defensive obstetrics" among obstetricians for fear of litigation claims should be duly addressed by law enforcing authority and respective government after paying due attention to the pros and cons of such practices.

CONCLUSIONS

Financial allocation for maternal health care should be enhanced and incentives for vaginal deliveries should be promoted. Provision of proper infrastructures, facilities of EFM (Electronic Fetal Monitoring) devices in rural set up too, along with trained man-power will certainly have a positive impact in terms of increased vaginal delivery rate. Health education activities highlighting the advantages of vaginal deliveries also should be promoted. A hospital-based audit system should be kept in place in order to closely monitor the incidences of and indications for Cesarean Sections in both private and public health care institutions. By doing so, it is possible to maintain CS rate within a respectable range (somewhere between 10-15%) while maintaining a fairly low maternal and perinatal morbidity & mortality ratio.

ACKNOWLEDGEMENT

Special thanks to Ms Debjani Dutta, Data entry operator of COM JNM Hospital.

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