
**Changing Trends in Indications of lower section Caesarean Section
(LSCS) over a Decade in a Tertiary Care Centre: An Institutional
Study**

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ABSTRACT

INTRODUCTION: The increase in caesarean section rate has been a global phenomenon. This study focuses on the changing trends in indications for caesarean section over a decade in an urban setup. **MATERIAL AND METHODS:** In this retrospective cross-sectional study we analysed all cases of caesarean delivery at Cama And Albles Hospital from 1st August 2003 to 31st January 2004 in regarding the patient's age, parity, indications, associated risks factors, duration of surgery and compared with the data from 1st August 2013 to 31st January 2014. **RESULTS:** In 2004 group foetal distress, was the leading cause in 35.84% of cases, followed by previous LSCS in 26.57%, PIH 17.29% and CPD 10.77% whereas in 2014 group Previous LSCS was the leading cause in 35.2% of cases, followed by foetal distress 14.9% and previous 2 LSCS 10.5%. Considering previous LSCS as an indication, scar tenderness and floating head in labour accounted for 75% of cases in 2014 group. 30 cases (43.48%) underwent LSCS primarily for PIH in 2004 group while 11 cases (26.19%) underwent LSCS in 2014 group. 82.25% cases in 2004 while only 38% in 2014

were labelled as foetal distress due to fetal heart abnormalities detected by intermittent manual auscultation and tococardiography. 43.31% cases of foetal distress in 2004 group while 40.23% cases in 2014 group were without any associated risk factors.

CONCLUSION: In a decade obstetrics has changed from more primary LSCS for relative indications to the challenging task of VBACs in Previous LSCS. Use of precise interpretation of foetal heart tracing, good trial of VBACs and practice of evidence based obstetrics would definitely go a long way in balancing caesarean section rates.

KEYWORDS: Foetal distress, PIH, Previous LSCS, VBAC

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INTRODUCTION

Practice of obstetrics has changed over the past century. From 1972 to 2010 caesarian delivery rates in the United States rose from 4.5% of all deliveries to 32.8%⁽¹⁾. In 2010 LSCS rate actually declined due to a significantly increased rate of vaginal birth after cesarean (VBAC) and closely mirrored decrease in primary rate⁽²⁾. However this trend was short lived and LSCS rate remains above

30% in USA⁽³⁾. There is no consensus regarding the ideal caesarean section rate.

However, World Health Organization (WHO) states that no additional health benefits are associated with a caesarean section rate above 10 – 15%. The increase in caesarean section rate has been a global phenomenon. Caesarean section rate in England is 21.5 %⁽⁴⁾, and in Latin American countries is 40 %⁽⁵⁾. Reasons for continued increase in caesarean rates are women having fewer

children, rising average maternal age, widespread electronic foetal monitoring, recognition of fetus as a patient and non-acceptance of forceps and vacuum deliveries.

Rise in prevalence of induced labour and obesity along with decreased vaginal deliveries in pre-eclampsia and concerns for pelvic floor injury are also responsible for this trend. The decision whether to perform a caesarean section or not, is based on the individualized judgement of the obstetrician, the hospital where the caesarean would be performed. Economic factors and fear of litigation are other considerations which may indirectly influence such decisions.

On the other hand, the secondary rise in repeat caesarean delivery has been associated with an increase in severe complications particularly the complication of placentation like placenta praevia and placenta accrete which in turn

increases the maternal morbidity & even mortality^(6,7).

It is for these reasons that in our study the attention has been directed to the indication for caesarean section. The present study focuses on the changing trends in indication for caesarean section over a decade in an urban setup.

The present retrospective analytical study attempts to critically analyze indications and outcome of caesarean deliveries performed over a span of 6 months in tertiary care hospital in the same months of 2003 – 2004 and 2013 – 2014.

MATERIALS AND METHODS:

Study site: Cama And Albess hospital is one of the renowned and old institutes located in South Mumbai. It is a tertiary care center which carries approximately 3000 deliveries per year. The obstetric data from CAMA and ALBLESS Hospital was analysed in the present retrospective cross sectional study with group comparison.

Data collection:

All cases of caesarean delivery from 1st August 2003 to 31st January 2004 were analyzed regarding the patient's age, parity, indications, associated risks factors, duration of surgery and compared with the data from 1st August 2013 to 31st January 2014. The decision to perform a caesarean

section in each of these patients was made by a consultant on duty in consultation with the unit head telephonically.

The primary objective of the study was to identify the change in trends of indications over a decade with the secondary objective to analyse factors responsible for this changing trend.

OBSERVATIONS AND RESULTS:

We analysed the excel sheet and compared the following parameters in both the groups.

- 1) Incidence
- 2) Age
- 3) Parity
- 4) Gestational age
- 5) Primary Indications of LSCS
- 6) Other risk factors associated with common indications of LSCS:
 - a) Previous LSCS b) PIH c) Mode of Diagnosis of fetal distress
- 7) Duration of surgery

Our observations are as follows:

1) Incidence: We had total 1730 number of deliveries from 1st August 2003 to 31st January 2004, out of which 399 were LSCS. So the overall incidence of LSCS is 23.06%. Whereas, from 1st August 2013 to 31st January 2014 we had total 1844 number of deliveries, of which, 474 were LSCS making incidence of LSCS 25.7%.

2) Age: The average age of total LSCS cases in 2003 - 2004 was 24.51 whereas that of in 2013-2014 population was 25.7 which are comparable, as shown in Table 1.

Table 1: Comparison of Age groups

Age Groups	Number 2004	Percentage	Number 2014	Percentage
	N =399		N = 474	
< 19 Years	30	7.51	17	3.58
>35 Years	21	5.62	15	3.16

3) Parity: In 2003 – 2004 42.1% patients were primipara and only 1% were grand multipara (4 and above) whereas in 2013 – 2014 32% patients were primipara and only 1% were grand multipara.

4) Gestational age: 7.5% (30) patients were less than 37 weeks maturity in 2003 - 2004. Out of these 7.5% patients, total 1.75% (17) patients were less than 34 weeks maturity. Total 1.25% patients were post-dated pregnancy (>42 weeks). 11.8% (56) patients were less than 37 weeks maturity 2013 - 2014. Out of these 11.8% patients, total 3.5% (17) patients were less than 34 weeks maturity. Total 2.1% patients were post-dated pregnancy (>42 weeks). So this data is comparable in both the groups.

5) Indications: The main indications of caesarean delivery are shown in Table 2. In 2004 group foetal distress, was the leading cause in 35.84% of cases, followed by previous LSCS in 26.57%, PIH 17.29% and CPD 10.77%. In 2014 group Previous LSCS, was the leading cause in 35.2% of cases, followed by foetal distress in 14.9% of cases and previous 2 LSCS 10.5%.

6) Other risk factors associated with common indications of LSCS:

Most number of indications was relative indications. Three important relative indications and associated risk factors we studied were Previous one LSCS, PIH and Foetal Distress separately.

Table 2: Indications of LSCS

Indications	Number 2004 (N=399)	Percentage	Number 2014 (N=474)	Percentage
Previous 1 LSCS	106	26.57	167	35.23
Fetal distress	124	35.84	71	14.97
Previous 2 LSCS	9	2.26	50	10.54
PIH	20	17.29	42	8.86
Mal-presentation	26	7.92	29	6.11
Failure of Induction	5	1.25	24	5.06
CPD	29	10.77	22	4.64
Labour abnormalities	24	5.51	21	4.43
APH	9		12	3.53
Multiple pregnancies	3	1	10	2.11
Oligohydraminoes	10	3.51	9	1.89
PROM	13	4.01	9	1.89
IUGR	12	3.76	3	0.63
Post datism	3	1.25	3	0.63
Medical disorders	0	0.25	2	0.42
BOH	3	1	0	0
Cord prolapse	2	0.5	0	0
Hand prolapse	1	0.25	0	0

Table 3 shows the number and percentage of repeat caesarean deliveries in cases of previous caesarean deliveries. Scar tenderness and floating head in labour accounted for 75% of cases in 2014 group.

Table 3: Risk factors associated with Previous LSCS cases undergoing repeat caesarean delivery

RISK FACTORS	Number 2004 (N = 106)	Percentage	Number2014 (N = 167)	Percentage
Scar tenderness	14	13.20	55	32.93
In labour with floating head	33	31.13	50	29.94
CPD	13	12.26	13	7.78
Fetal Distress	19	17.92	13	7.78
Malpresentation	3	2.83	7	4.19
Post-datism	1	0.94	7	4.19
PROM	4	3.77	7	4.19
Failure of Induction	0	0	5	2.99
PIH	9	8.49	4	2.39
Oligohydramnios	4	3.77	3	1.79
BOH	1	0.94	1	0.59
Twins	1	0.94	1	0.59
Non progress of labour	1	0.94	1	0.59
APH	3	2.83	0	0

Table 4 shows number and percentage of caesarean deliveries in PIH cases. PIH per se is not an indication for LSCS but in our study we found 30 cases (43.48%) underwent LSCS primarily for PIH in 2004 group while 11 cases (26.19%) in 2014 group.

Table 4: Risk factors associated with PIH cases undergoing LSCS.

Risk factors	Number 2004(N-69)	Percentage	Number 2014(N-42)	Percentage
None	30	43.48	11	26.19
Failure of induction	2	2.90	5	11.90
Labour abnormalities	2	2.89	4	9.52
Fetal distress	16	23.18	3	7.14
Twin gestation	16	23.18	3	7.14
APH	1	1.44	3	7.14
CPD	1	1.44	2	4.76
IUGR	7	10.14	2	4.76
Eclampsia	0	0	2	4.76
Malpresentation	2	2.89	2	4.76
Oligohydraminoes	2	2.89	1	2.38
Thrombocytopenia	0	0	1	2.38
BOH	2	2.89	0	0
Post datism	1	1.44	0	0
PROM	2	2.89	0	0

As shown in Table 5, 82.25% cases were labelled as foetal distress due to fetal heart abnormalities detected by intermittent manual auscultation and tococardiography in 2004 group while 38% labelled in 2014 group. When we compared the co-morbidities associated with foetal distress 43.31% case in 2004 group were found without any co-morbidities while 40.23% cases in 2014 group were without any risk factors which is comparable, as depicted in Table 6.

7) Duration of surgery Average time taken from taking the Patient to OT table to taking her to recovery room was 100mins in 2004 group and 86 minutes in 2014 group.

Table 5: Modes of Diagnosis of Foetal Distress

Modes of Diagnosis	Number 2004 (N = 124)	Percentage	Number2014 (N = 71)	Percentage
MSAF	20	16.12	37	52.11
Fetal Heart Abnormalities	102	82.25	27	38.2
Abnormal Doppler	0	0	7	9.85
Absent/Decreased Foetal Movements	2	1.61	0	0

Table 6: Risk factors associated with Foetal distress cases undergoing LSCS (In 2004 data 19 cases of Previous 1 LSCS and 1 case of Previous 2 LSCS has associated indication as Foetal distress. So N = 144. Similarly, in 2014 data 13 cases of Previous 1 LSCS and 3 case of Previous 2 LSCS has associated indication as Foetal distress)

Risk Factors	Number 2004 (N = 144)	Percentage	Number2014 (N = 87)	Percentage
None	71	43.31	35	40.23
Prev 1 lscs	19	12.19	13	14.94
Prev 2 lscs	1	0.69	3	3.45
PIH	16	11.11	3	3.45
Prev 1 lscs with PIH	0	0	4	4.59
PROM	10	6.94	5	5.74
IUGR	6	4.16	4	4.59
Polyhydraminoes	6	4.16	0	0
Oligohydraminoes	4	2.78	7	8.05
CPD	5	3.47	1	1.15
Breech	2	1.38	2	2.30
BOH	1	0.69	0	0
APH	1	0.69	0	0
Failure of induction	1	0.69	5	5.75
Previous Salpingophorectomy	1	0.69	0	0
Twins	0	0	3	3.45
Triplets	0	0	1	1.15
Non progress of labour	0	0	1	1.15

DISCUSSION

When we compared the incidence there is only 2% difference in the two groups. This indicates that the incidence of LSCS has not significantly changed in a decade in our tertiary care teaching institute.

More number of teenage pregnancies (7.5%) was present a decade back as compared to (3.5%) and comparatively less elderly gravid (3.1%) underwent LSCS in 2014 data as compared to 5.2% in 2004. So, the increasing age of the mother may not be actually responsible for increased indication of LSCS. 10% more primi-gravida underwent LSCS a decade back and mostly because of foetal jeopardy, mal-presentation and dystocia.

When we compared individual indications we found in 2004 group more patients underwent primary LSCS (71%) as compared to 54.3% in 2014. while in 2014 group repeat caesarian delivery, 1 and more (45.7%), looks to be the common factor for LSCS.

Scar tenderness and floating head in labour accounted for 75% of cases. This can be explained by trend of increased VBACs in Previous LSCS cases in 2014. VBAC should be considered in cases of previous one caesarean section done for non recurrent indications. Repeat LSCS rate is higher due to trend towards less trial of labour and early decision of repeat LSCS ⁽⁸⁾.

PIH per se is not an indication for LSCS but in our study we found 30 cases (43.48%) underwent LSCS primarily for PIH in 2004 group while 11 cases (26.19%) in 2014 group. This difference can be primarily because of more successful induction of labour in PIH cases due to good availability and liberal use of Prostaglandins in 2014.

When we compared the co-morbidities associated with foetal distress 43.31% case in 2004 group were found without any co-morbidities while 40.23%

cases in 2014 group were without any risk factors which is comparable. Use of internal foetal monitoring can help in changing this trend as scalp pH monitoring is not done in our setup.

Average time taken from taking the Patient to OT table to taking her to recovery room was 100mins in 2004 group and 86 minutes in 2014 group. This decrease in surgical time over a decade can be explained by use of modern electrosurgical technique, improved skills and supervision.

CONCLUSION

Previous caesarean section still remains the leading indication for caesarean delivery in 2014 group. Therefore a careful individualization of every case, meticulous

clinical examination and use of intensive intra-partum fetomaternal surveillance done in tertiary care teaching institutes could probably reduce the rates of caesarean section.

Increasing age of the mother which is commonly sought to be the reason for high incidence of LSCS in urban population may not be true. In a decade obstetrics has changed from more primary LSCS for relative indications to the challenging task of VBACs in Previous LSCS. Use of standardized management guidelines, precise interpretation of foetal heart tracing, good trial of VBACs and practice of evidence based obstetrics would definitely go a long way in balancing the rates of caesarean section.

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