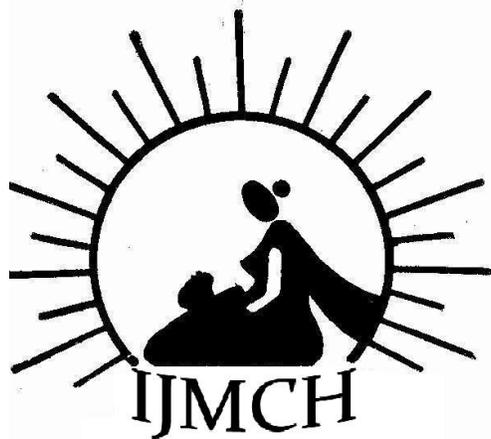


Volume 14 (3), 2012

**AN ANALYSIS OF THE INDICATIONS FOR
CESAREAN SECTION IN A TEACHING HOSPITAL IN
TAMILNADU**

G.Ganitha

www.ijmch.org



INDIAN JOURNAL OF MATERNAL AND CHILD HEALTH

To analyze the indications for LSCS in a tertiary care teaching hospital and propose strategies to reduce the cesarean section rate.

AN ANALYSIS OF THE INDICATIONS FOR CESAREAN SECTION IN A TEACHING HOSPITAL IN TAMILNADU

G.Ganitha, M.S (O&G)

Assistant Professor, Department of Obstetrics & gynecology, Karpaga Vinayaga Institute of Medical Sciences and Research, Kancheepuram, Tamilnadu, India

E-mail: drgganitha77@gmail.com

ABSTRACT

Research question: To analyze the indications for LSCS in a tertiary care teaching hospital and propose strategies to reduce the cesarean section rate.

Settings: Department of Obstetrics and Gynecology, Karpaga vinayaga medical college and hospital, Tamilnadu

Study design: Retrospective study of 252 cases of cesarean section from July 2010 to December 2011.

Participants: All women who underwent LSCS during the study period.

Methodology: Retrospective analysis of all the patients who underwent cesarean section during the study period.

Results: The incidence of cesarean sections during the study period was 21.86%.The incidence of elective LSCS was 38.9% and that of emergency LSCS was 61.1%.The primary LSCS rate was 50.8% and that of repeat LSCS was 49.2%.The commonest indication for LSCS was failure to progress (17.9%) followed by previous LSCS (14.3%), cephalopelvic disproportion (13.1%) and fetal distress (12.3%).

Key words: *Cesarean delivery, previous LSCS, repeat LSCS*

INTRODUCTION:

Over the few decades, cesarean section has become one of the commonly performed surgeries. Increasing cesarean section rates are a major cause for concern in all countries. According to the WHO recommendations, the optimal cesarean delivery rate is 10-15 %⁽¹⁾. However, the cesarean rate is much higher than this in several countries⁽²⁻⁶⁾. Liberalization of maternal and fetal indications, fear of litigation and cesarean sections on demand has contributed to the rising trend of cesarean delivery. The increased cesarean rate has resulted in higher costs of health care and possibly increased maternal morbidity⁽⁷⁾. This study has been undertaken to analyze the various indications for cesarean sections performed in our hospital so as to suggest strategies to reduce the cesarean section rate.

MATERIALS AND METHODS:

This is a retrospective descriptive study. There were 1153 deliveries during the study period of 18 months from July 2010 to December 2011 which included 252 cesarean sections. The data of all the patients who underwent cesarean section during this period was collected from their operation records and analyzed for maternal characteristics and indications for LSCS. Mean and percentage were the statistical methods used. Patients undergoing repeat LSCS following trial of labor in previous LSCS were also included in the study. Patients undergoing laparotomy for rupture uterus were excluded from the study. Based on the timing of the surgery, LSCS was classified as elective or emergency LSCS. LSCS performed on unscarred uterus was labeled as primary CS. CS performed on women with one or more previous cesarean delivery was labeled as repeat CS.

OBSERVATIONS:

There were 1153 deliveries during the study period of 18 months from July 2010 to December 2011 which included 252 cesarean sections. The incidence of cesarean sections during the study period was 21.86%. The mean age of patients was 24 years. 101 (40.1%) cases were booked and 151 (59.9%) cases were referred or unbooked. Most women were of gravidity 2 (55.6%). The maternal characteristics are described in table I.

Table I: Distribution of Maternal characteristics

Maternal characteristics	No. of patients	Percentage	
Age(years) n=252	< 20	65	25.8
	21-30	162	64.3
	31-40	25	9.9
	>40	0	0
Gravidity n=252	1	78	30.9
	2	140	55.6
	≥ 3	34	13.5

154 (61.1%) women underwent emergency LSCS and 98 (38.9%) women underwent elective LSCS. The primary CS rate was 50.8% (128). The repeat LSCS rate was 49.2% (124). Out of the 124 patients who underwent repeat LSCS, 9 cases had previous 2 LSCS (3.6%) and 115 cases had previous 1 LSCS (45.6%). Out of the 115 patients with previous one LSCS, 79 (31.4%) patients underwent repeat LSCS due to associated obstetric indications. 36 (14.3%) cases

were operated for previous LSCS (with no other associated obstetric/medical indication).The indications for LSCS performed during the study period are summarized in table II.

Table II: Indications for LSCS

INDICATIONS	Repeat LSCS (n =124)	Primary LSCS (n=128)	Total (n=252)	
			n	%
Previous LSCS	36		36	14.3
Previous 2 LSCS	9		9	3.6
Failure to progress*	7 ^a	38	45	17.9
Fetal distress	1 ^a	30	31	12.3
Cephalopelvic disproportion	26	7	33	13.1
Breech	5	7	12	4.8
Malpresentations other than breech	2	3	5	2
Maternal medical diseases**	9	10	19	7.5
Obstructed labor	0	1	1	0.4
Threatened rupture	3 ^a	0	3	1.2
Multiple gestation(twins)	3	3	6	2.4
APH	2	2	4	1.6
PROM with unfavorable cervix(without induction)	11	0	11	4.4
Failed induction	0	10	10	4
Elderly primi	2	2	4	1.6
Postdatism	2	0	2	0.8
IUGR	2	4	6	2.4
Oligohydramnios	2	1	3	1.2
H/O myomectomy	1	2	3	1.2
BOH	1	4	5	2
Cord prolapse	0	1	1	0.4
HIV/ genital lesions	0	3	3	1.2

*failure to progress includes cervical dystocia, deep transverse arrest, persistent occipitoposterior, secondary arrest of descent of head.

**maternal medical diseases include Gestational Diabetes Mellitus, severe preeclampsia, eclampsia, gross obesity

^a - following trial of labor in previous LSCS

APH – Ante partum hemorrhage

PROM – Premature rupture of membranes

IUGR - Intrauterine growth restriction

BOH - Bad obstetric history

DISCUSSION:

Over the past few decades, the cesarean delivery rate has shown a rising trend in several countries. Several factors have been attributed for this rise. The increasing safety of modern anesthesia and improved blood bank facilities has made cesarean delivery much safer in the present era. The present lifestyle has increased the incidence of pregnant women with medical disorders such as Gestational Diabetes Mellitus, PIH, eclampsia, obesity and big babies. The increase in age of women at first pregnancy and increasing number of women treated for infertility with a consequent increase in multiple gestations, IUGR and preterm labor has also increased the incidence of operative delivery. Improved fetal surveillance and NICU facilities have expanded the fetal indications for cesarean deliveries.

Studies show that the cesarean section rate in United States is 25%⁽²⁾, England 20%⁽²⁾, South Africa 57%⁽³⁾, Brazil 85%⁽⁴⁾, Tehran 42.3%⁽⁵⁾ and Nepal 33.7%⁽⁶⁾. A study by the ICMR in 33 tertiary care institutions noted that the cesarean section rate has increased from 21.8% in 1993-1994 to 25.4% in 1998-1999⁽⁷⁾. The CS rate in our hospital is 21.9%. According to the WHO recommendations, the optimal cesarean delivery rate is 10-15 %⁽¹⁾. The CS rate in our hospital is higher than the WHO recommendations. The present study showed that the emergency CS rate (61.1%) is higher than the elective CS rate (38.9%). This is probably because our hospital is a referral centre and most cases were unbooked/referred (59.9%). The emergency CS rates as noted by Rafique et al is 37.3%⁽⁸⁾, by Naidoo et al is 39.2%⁽⁹⁾, by Karim et al is 85.9%⁽¹⁰⁾. The repeat cesarean section rates noted in the present study are compared with other studies in Table III. This table shows that the repeat CS rates are higher in the more recent studies.

Table no III: comparative studies on repeat CS rates

S.No	REPEAT CS RATE (%)	AUTHOR(S)(YEAR)
1	49.2	Present study(2010-11)
2	43.5	Rafique et al (2010) ⁽⁸⁾
3	47.2	Karim et al (2009) ⁽¹⁰⁾
4	31.2	Moini et al (1999-2003) ⁽⁵⁾
5	30.8	Naidoo et al (2004) ⁽⁹⁾
6	36.3	Gregory et al (1994) ⁽¹¹⁾

The commonest indication for LSCS in the present study is failure to progress (17.9%) followed by previous LSCS (14.3%), cephalopelvic disproportion (13.1%) and fetal distress (12.3%). Many studies have reported these indications as the major contributors for cesarean delivery⁽⁵⁻¹¹⁾. In our institution, term breech is an accepted indication for CS. The use of electronic fetal heart rate monitoring has increased the detection of fetal distress.

In the present study, one of the major indications for LSCS was previous CS without associated obstetric indications (14.3%). Fear of uterine rupture and following maternal and fetal morbidity or mortality are the deterrents for TOL in previous LSCS. However, ACOG has laid down guidelines for VBAC and has found trial of labor safe in properly selected cases of previous LSCS⁽¹²⁾.

Decreased instrumental delivery rate, reluctance for vaginal breech delivery and liberalization of LSCS for relative indications like oligohydramnios, IUGR, BOH, postdatism, elderly primigravida, infertility, HIV and miscellaneous have also contributed to the increased CS rate.

Fear of litigation, insurance policies and timing the delivery according to the convenience of doctor and patient have indirectly contributed to high CS rates. Cesarean sections on maternal demand are on the rise⁽¹³⁾. Women wanting to avoid labor pains or retain the pelvic floor tone after childbirth prefer CS over vaginal delivery. However in the present study there are no cases of CS performed for maternal request. Our institution mainly caters to rural population and women from low socio economic strata who prefer vaginal delivery over CS.

Women undergoing CS are exposed to the risks of anesthesia, hemorrhage, injuries, deep venous thrombosis, sepsis and other postoperative complications⁽⁷⁾. Women undergoing CS have increased risk of placental abnormalities⁽¹⁴⁾, uterine rupture⁽¹⁵⁾ and ectopic pregnancy⁽¹⁶⁾ during the subsequent pregnancies. Longer bed occupancy and higher health care costs are also of concern to the health care providers.

Considering the benefits of vaginal delivery over CS, every effort must be taken to reduce unnecessary Cesareans. Judicious and timely use of oxytocin and using partogram can reduce the incidence of dystocia. A second opinion or peer review of cases judged to have dystocia and CPD may reduce their incidence. ACOG has recommended forceps delivery as a safe option for delivery⁽¹⁷⁾. Studies show that the fetal outcome is not significantly different between abdominally and vaginally delivered breech babies⁽¹⁸⁾. Encouraging external cephalic version and vaginal breech delivery is recommended. Since previous CS is a common indication for elective CS and the incidence of uterine rupture in properly selected cases of TOL is low, TOL with close intrapartum monitoring as laid down by ACOG guidelines for VBAC⁽¹²⁾ can greatly reduce the CS rate. CS on maternal demand without indications must be discouraged.

CONCLUSIONS:

Cesarean delivery is often a life saving procedure for the mother or fetus. While the benefits of indicated cesarean delivery cannot be denied unnecessary cesareans must be avoided. Since previous LSCS is a common indication, Trial of labor must be encouraged in properly selected cases of previous LSCS. A reduction in the primary cesareans can reduce the overall cesarean rates and also decrease the number of women with previous CS in subsequent pregnancies. Adherence to standard guidelines and regular CS audits can keep a check on unnecessary cesareans.

REFERENCES:

1. World Health Organization. Appropriate technology for birth. *Lancet* 1985; 2(8452): 436-7.
2. Royal College of Obstetrics and Gynaecology Clinical Effectiveness Support Unit. The national sentinel caesarean section audit report. London: RCOG Press, 2001
3. Matshidze KP, Richter LM, Ellison GT, Levin JB, McIntyre JA. Caesarean section rates in South Africa: evidence of bias among different "population groups". *Ethn Health* 1998; 3(1-2):71-9.
4. Kilsztajn S, Carmo MS, Machado LC Jr, Lopes ES, Lima LZ. Caesarean sections and maternal mortality in Sao Paulo. *Eur J Obstet Gynecol Reprod Biol* 2007; 132(1):64-9.
5. Moini A, Riazi K, Ebrahimi A, Ostovan N. Caesarean section rates in teaching hospitals of Tehran: 1999-2003. *East Mediterr Health J*. 2007; 13(2):457-60.
6. S Chhetri, U Singh. Caesarean section: its rates and indications at a tertiary referral center in Eastern Nepal. *Health Renaissance* 2011; 9(3): 179-183

7. Kambo I, Bedi N, Dhillon BS, Saxena NC. A critical appraisal of cesarean section rates at teaching hospitals in India. *Int J Gynecol Obstet* 2002; 79: 151-8.
8. Saima Rafique, Gul E Raana. High Emergency Caesarean Section Rate - A comparison of indications in years 2005 and 2010. *Pakistan Journal of Medical and Health Sciences* 2011;5(3):489-91
9. Naidoo N, Moodley J, Rising rates of caesarean section: an audit of caesarean sections in specialist private practice *SA Fam Pract* 2009; 51 (3):254-58
10. Farah Karim, Asifa Ghazi, Tehmina Ali, Rukhsana Aslam, Uzma Afreen, Romana Farhat Trends and Determinants of Caesarean Section *Journal of Surgery Pakistan (International)* 2011; 16 (1): 22-27.
11. Gregory KD, Curtin SC, Taffel SM, Notzon FC. Changes in indications for cesarean delivery: United States, 1985 and 1994. *Am J Public Health*. 1998; 88(9):1384-7.
12. ACOG Practice Bulletin No. 54: vaginal birth after previous cesarean. *Obstet Gynecol* 2004; 104:203-12.
13. Mackenzie IZ, Cooke I, Annan B. Indications for cesarean section in a consultant unit over the decades. *J Obstet Gynecol* 2003; 23:233-8.
14. Gilliam M, Rosenberg D, Davis F. The likelihood of placenta previa with greater number of cesarean deliveries and higher parity. *Obstet Gynecol* 2002; 99:976-80.
15. Leung AS, Leung EK, Paul RH. Uterine rupture after previous cesarean delivery: maternal and fetal consequences. *Am J Obstet Gynecol* 1993; 169:945-950
16. Mollison J, Porter M, Campbell D et al. Primary mode of delivery and subsequent pregnancy. *Br J Obstet Gynecol* 2005; 112:1061-5.
17. American college of Obstetricians and Gynecologists. American College of Obstetricians and Gynaecologists practice bulletin operative vaginal delivery. Washington DC: ACOG; 2000.
18. ACOG Committee Opinion No. 340. Mode of term singleton breech delivery. *Obstet Gynecol*. Jul 2006; 108(1):235-7.