

## FREQUENCY AND INDICATIONS OF CESAREAN SECTION IN A TERTIARY CARE HOSPITAL

Gulfareen Haider<sup>1</sup>, Nishat Zehra<sup>2</sup>,  
Aftab Afroz Munir<sup>3</sup>, Ambreen Haider<sup>4</sup>

### ABSTRACT

**Objective:** To determine the frequency of cesarean section and to analyze the indications, so as to introduce measures to control the cesarean section rate.

**Methodology:** This descriptive study was conducted in obstetric and gynecology department of Isra university hospital Hyderabad Sindh from 1<sup>st</sup> Jan 2007 to 31<sup>st</sup> Dec 2007. In this study clinical record of all the patients who underwent cesarean section was analyzed. It included all the pregnant ladies booked in the antenatal clinic and unbooked patients admitted in early labour for whom cesarean section was indicated later. It also included all those cases coming in emergency at any time for which cesarean section was indicated. Clinically diagnosed cases of ruptured uterus proved on laparotomy were not included in the study. Data was analyzed on SPSS version 11 and frequencies as well as percentages were calculated.

**Results:** During one year study period, 380 cesarean sections were performed. The rate of cesarean section was 64.7%. Emergency cesarean section was performed in 225 (59.2%) patients and elective cesarean section in 155 (40.7%). Among 380 patients, 167 (43.9%) were booked while 213 (56.0%) were unbooked. Repeat cesarean section was the commonest indication seen in 73 (19.2%) patients followed by dystocia in 51 (13.4%) patients, fetal distress in 48 (12.6%) and ante partum hemorrhage in 45 (11.8%) patients. Miscellaneous indications contributed to 16 (4.2%) of the cases.

**Conclusion:** Majority of patients who underwent cesarean section was unbooked and had an emergency cesarean section. The commonest indication was repeat cesarean section.

**KEY WORDS:** Cesarean section, Indications, Frequency.

Pak J Med Sci October - December 2009 (Part-I) Vol. 25 No. 5 791-796

### How to cite this article:

Haider G, Zehra N, Munir AA, Haider A. Frequency and indications of cesarean section in a tertiary care hospital. Pak J Med Sci 2009;25(5):791-796.

## INTRODUCTION

The steadily increasing global rates of cesarean section have become one of the most debated topics in maternity care as its prevalence has increased alarmingly in the last few years.<sup>1-2</sup> Cesarean section is a major surgical procedure with a corresponding level of risk and should be performed in the presence of specific and clearly defined indications while some of the obstetricians consider it to be quite simple, efficient, safe and psychologically

---

### Correspondence:

Dr. Gulfareen Haider  
Assistant Professor  
Department of Obstetrics & Gynaecology,  
Isra University Hospital,  
Hala Road,  
Hyderabad - Sindh,  
Pakistan.  
Email: gfareen@yahoo.com

- \* Received for Publication: December 1, 2008
- \* Revision Received: August 5, 2009
- \* Revision Accepted: August 24, 2009

well-tolerated procedure and far superior to secondary interventions such as vacuum delivery or emergency cesarean section.<sup>3</sup>

Cesarean section is subject of professional controversy.<sup>4</sup> Controversy over the rate of cesarean section is going on though there is no clear evidence on the relative benefits of higher or lower rates.<sup>5</sup> Today cesarean birth accounts for 15-25% of all deliveries in developed countries with maternal mortality of less than 1:10,000. In South Korea cesarean section rate approached 40% in year 2000.<sup>6</sup> WHO recommended that there is no additional health benefits associated with cesarean section rate above 10-15%.<sup>7</sup> Leitch and Walker stated that the focus of study should be the indications of cesarean section.<sup>8</sup> There is current awareness about the right to self determination, which can be exercised in almost unlimited fashion throughout ones adult life. The women in the developed countries are now requesting elective cesarean section with out any medical or surgical indications as preferred mode of delivery.

Although, the cesarean section rates have increased over the last ten to fifteen years, the four major clinical determinants of the cesarean section rate have not changed. These remain fetal compromise, failure to progress in labour, repeat cesarean section and breech presentation. The fifth most common reason given for performing a cesarean section is now reported to be maternal request.

The trend of increasing cesarean section rates may indicates a trend towards a more costly medical delivery system. Effective implementation of the strategies to reduce cesarean section rates may depend on the social and cultural milieu, associated belief and practices of the society.<sup>9</sup> As few studies have been conducted on this topic in Pakistan, this study was conducted to determine the frequency of cesarean section and to analyze the indications in our setup, so as to introduce measures to control the cesarean section rate.

## METHODOLOGY

This is a descriptive study conducted from 1<sup>st</sup> Jan 2007 to 31<sup>st</sup> Dce 2007 based on sample of convenience. It included all the pregnant ladies booked in the antenatal clinic and unbooked patients admitted in early labour in which cesarean section was indicated later. It also included all those cases coming in emergency at any time for which cesarean section was indicated. Clinically diagnosed cases of ruptured uterus and proved on laparotomy were not included in the study. A proforma for each patient was completed, regarding the relevant information of the cesarean delivery including maternal age, parity, obstetric background, whether booked or un booked cases, elective or emergency cesarean section, operative procedure including abdominal and uterine incision, type of anesthesia, fetal outcome as well as maternal morbidity .

All study subjects were divided in low, middle and upper social class, if family income was up to rupees five thousand per month, up to Rupees fifteen thousand per month or more than Rupees fifteen thousand per month respectively. Data was analyzed on SPSS version 11 for frequency and percentage.

## RESULTS

In the study period we delivered 587 patients of whom 380 underwent cesarean section and 207 patients had vaginal delivery. Hence the cesarean section rate was 64.7%. Sociodemographic details are given in Table-I.

Out of 380 patients, 218(57.3%) patients belonged to rural area while 162(42.6%) patients came from urban area. Out of 380 patients who underwent cesarean section, 213 (56.0%) patients were unbooked while 167(43.9%) were booked cases who received antenatal care. Two hundred twenty five (59.2%) patients underwent emergency cesarean section while in 155(40.7%) patients cesarean section was done electively.

Table-II shows indications for cesarean section. The most common indication of cesar-

Table-I: Socio demographic data

Indication	No. of Patient (%)
<i>Age</i>	
< 20	51 (13.4)
21-30	209 (55)
31-40	81 (21.3)
>41	39 (10.2)
<i>Parity</i>	
Primi	87 (22.8)
Multi	211 (55.5)
Grand Multi	82 (21.5)
<i>Socioeconomic condition</i>	
Poor	220 (57.8)
Middle	89 (23.4)
Upper	71 (18.6)
<i>Education</i>	
Educated	145 (38.15)
Uneducated	235 (61.8)

ean section was repeat cesarean section seen in 73(19.2%) patients. Out of these 73 patients, repeat cesarean section was done due to previous two cesarean section in 41 patients, due to previous three cesarean section in 22 patients and because of previous four cesarean section in 10 patients.

Another common indication of cesarean section was dystocia; prolong labour which was present in 51(13.4%) patients and fetal distress in 48(12.6%) patients. Other indications of cesarean section were ante partum hemorrhage (APH) which was present in 45(11.8%) patients. Out of these 45 patients, 34 patients had placenta abruption while 11 patients have placenta previa. All cesarean section were performed in general anesthesia by pfannenstiel incision.

## DISCUSSION

Isra University hospital caters majority of the patients from nearby villages. People living in villages have lack of awareness about health measures and health facilities. The people are

Table-II: Indication of Cesarean section

Indication	No. of Patient (%)
Fetal distress	48 (12.6)
Dystocio	51 (13.4)
Repeat C/S	73 (19.2)
APH	45 (11.8)
Breech	16 (4.2)
Obstructed labour	25 (6.5)
Failed indication	18 (4.7)
Mal presentation transverse/oblique	17 (4.4)
BOH	24 (6.3)
Cord Prolapse	4 (1.0)
Eclampsia	35 (9.2)
Twin pregnancy	8 (2.1)
Miscellaneous	16 (4.2)
a.) cervical fibroid	2 (12.5)
b.) cord prolapse	3 (18.7)
c.) Hydrops fetalis	3 (18.7)
d.) post maturity	3 (18.7)
e.) Maternal wish	2 (12.5)
f.) cord presentation	1 (6.2)
g.) Compound presentation	2 (12.5)

extremely poor. Family size is large. They don't believe in antenatal care and consider birth a natural process. They bring their ladies to the hospital only when they are seriously ill and insist on vaginal delivery.<sup>10</sup>

Cesarean section is a major abdominal surgery which is life saving for the mother and fetus. By providing the alternate route of delivery the procedure offers great benefit in situations when vaginal delivery carries a high risk of complications and death. However maternal mortality following cesarean section is 7-10 times higher than for vaginal delivery and also in financial terms, cesarean section operation is more expensive due to the cost of operation and longer postoperative stay.<sup>11</sup>

During the study period, the frequency of cesarean section was 64.7%. According to WHO,

no region in the world is justified in having cesarean section rate greater than 10-15%,<sup>12</sup> thus this study shows a definite increase cesarean section rate.

The high rate in our study is because of the fact that majority of the pregnant women of surrounding population are delivered vaginally at home by traditional birth attendants, lady health visitors and GPs in private hospitals. Only those patients are referred to this teaching hospital who have one or other risk factor and who already had a trial of labour somewhere else. So the Cesarean section rate was obviously high in these high risk and non booked cases.

In Europe and USA the frequency of cesarean section has been increasing steadily over the year.<sup>13,14</sup> In Brazil more than 70% of deliveries occurring in private clinics are by cesarean section.<sup>15</sup> Thus to alter the cesarean section rate and to reverse the trend it is necessary to analyze the reasons behind cesarean section rate.

Studies from developed countries have revealed 5-10% higher cesarean section rate in upper social class and 20% increased cesarean birth among educated women.<sup>16,17</sup> However in our study, most of the patients 61.8 % were uneducated and came from rural area 57.3%. The majority of the patients in this study had received inadequate prenatal care, as most of them had had less than two regular prenatal consultations. This is mainly due to the paucity of general and obstetrical health care awareness in the society as well as devastatingly deprived socio-economic condition.<sup>18</sup> Moreover, most of the women in our study were housewives but some studies have attributed differences in an individual woman's risk of having a cesarean section, besides many other factors, to be associated with occupation.<sup>19</sup>

Due to lack of antenatal care, most of them 6.5% developed obstructed labour so when they came to the hospital, emergency cesarean section was the only life saving option. In our study 59.2% operations were done in emergency. Our figures are similar to those obtained by Rakhshanda Shaheen Najmi,<sup>20</sup> Nasreen Ruby<sup>21</sup>

and Fauquia Bano<sup>22</sup> as carried out in similar circumstances. Maternal age, parity and fetal weight are the factors over which obstetricians have little or no control but they have been shown to be crucial determinants of cesarean section rate.

Most of our patients were young between 25-35 years of age. Primigravida are group at high risk, as their capacity of childbirth has never been put to the test. However in our study cesarean section rate was high among multi-gravida women ie. 55.5%. Our findings are different than those reported by Amtula zareen<sup>13</sup> and Fabio Parazzim.<sup>23</sup> Currently repeat cesarean section is the most important cause of escalating section therefore implementation of a trial of vaginal delivery after previous c/section is mandatory to control the increasing cesarean section rate.<sup>24,25</sup> The success rate with trial of scar depends on appropriate selection criteria, which include non-recurrent previous cesarean section, adequate pelvic dimensions, known uterine scar and absence of medical complications and fetal macrosomia. In our setup it is difficult to fulfill the above mentioned conditions as majority of the patients with previous cesarean section come to teaching hospitals in established or advanced labour with associated medical or obstetrical problems without prior antenatal surveillance. This situation limits the number of cases that could be subjected to trial of labour.

Dystocia can be due to pelvic contraction, fetal macrosomia or uterine dysfunction. Reduction in percentage of cesarean section being done for dystocia could be achieved by employing protocol of active management of labour which includes diagnosis of inadequate progress of labour, timely amniotomy, use of prespecified dose of oxytocin and supervision of labour and delivery by senior staff.

We had seventeen cases of malpresentation, among which twelve were due to transverse presentation. Cesarean section is preferred mode of delivery of all transverse lie and the safe mode of delivery even when the child is dead.<sup>26</sup>

Breech presentation is associated with higher level of maternal mortality and morbidly irrespective of route of delivery as it is associated with fetal abnormalities and premature delivery. Vaginal delivery for term breech does not appear to increase morbidity and mortality if the case for vaginal delivery is well selected. Breech presentation was the indication in 4.2% of our patients. A policy of selective, planned vaginal delivery had been recommended in a study by Danielian in which they had not seen it to be associated with increased risk of long term infant morbidity.<sup>26</sup>

In ante partum hemorrhage (APH), cesarean section is life saving procedure both for the mother and the fetus. However in developing countries it carries much greater risk of complications than similar operations performed in the western world due to already existing anemia, malnutrition and high blood pressure in multiparous patients.

In this study all the cesarean section were performed with a specific indications. The cesarean section is considered as a last resort for delivery. The women in our region do not accept the cesarean section as a mode of delivery. The situation is very different in other countries where the women are requesting elective cesarean section as a first choice.

### CONCLUSION

This study showed that majority of patients who underwent cesarean section were unbooked and had an emergency cesarean section. The commonest indication of cesarean section was repeat cesarean section. Prevalence of poverty, illiteracy, multiparity and previous operative deliveries were strong determinants of high caesarean section rate. There is an urgent need for strong commitment at higher level of government and private sector to create circumstances so as to educate women, improve socioeconomic status, and improve antenatal surveillances and an effective referral chain so as to decrease the current high caesarean section rate.

### RECOMMENDATIONS

1. Cesarean section rate can be reduced by combined efforts at all levels and by encouraging hospital vaginal deliveries of all primigravida, grand multiparous pregnant women and those who had previous cesarean section.
2. Primary health care providers and TBA must be educated regarding the risk of injudicious use of oxytocins without proper assessment and the dangers of obstructed labour.
3. They should refer the complicated cases a bit earlier to reduce the incidence of maternal and fetal morbidity and mortality.
4. Government should improve the existing health facilities, so that antenatal and delivery services should be provided to all the pregnant women.

### REFERENCES

1. Tampakoudis P, Assimakopoulos E, Grimbizis G, Zafarakas M, Tampakoudis G, Mantalenakis S, et al. Cesarean section rates and indications in Greece: data from a 24 year period in a teaching hospital. *Clin Exp Obstet Gynecol* 2004;31:289-92.
2. Lee SL, Khang YH, Lee MS. Womens attitudes toward mode of delivery in South Korea: a society with high cesarean section rates. *Birth* 2004;31:108-16.
3. Schindl M, Birner P, Reingrabner M, Joura E, Husslein P, Langer M. Elective cesarean section vs. spontaneous delivery: a comparative study of birth experience. *Acta Obstet Gynecol Scand* 2003;82:834-40.
4. Husslein P. Elective cesarean section versus vaginal delivery. Whether the end of traditional obstetrics? *Arch Gynecol Obstet* 2001;265(4):169-74.
5. Treffers PE, Pel M. The rising trend for cesarean section. *BMJ* 1994;307:1017-8.
6. Lee SI, Khang YH, Lee Ms. Women attitude towards mode of delivery in South Korea: A society with high caesarean section rates. *Birth* 2004;31(2);108-16.
7. World Health Organization. LCS Appropriate technology for birth . *Lancet* 1985;2:436-7.
8. Leitch CR, Walker JJ. Cesarean section rates. *BMJ* 1994;308:133-4.
9. Lurie S. The changing motives of cesarean section: from the ancient world to the twenty first century. *Arch Gynecol Obstet* 2005;271:281-5.
10. Caesarean section historical perspective. {Editorial}. *Mother and Child* 1999; 37:1-2.

11. Demott RK, SandMire HF. The green bay caesarean section study. The physician's factor as a determinant of caesarean birth rate. *Am J Obstet Gynaecol* 1986;93:135-44
12. Harper V, Hall M. Trends in caesarean section. *Current Obstet Gynaecol* 1991:224-8.
13. Zareen A. A study on caesarean section. *The Professional* 1999;6:224-8.
14. Parrise KM, Holt VI, Estering TR, Counnel F.A, Gerfo JP. Effects of changing maternal age, parity and birth weight on primary caesarean section rate. *JAMA* 1995;271:3-7.
15. Badianni R, Ferrral Q, Ochoa LH, Patarra N, Wong L, Simoes C et al. Brazil national demographic and health service. Rio de Janeiro, Brazil: Sociedade Civil Bem Estar Familiar no Brasil (BEMFAM) 1997;182.
16. Abushama M, Ahmad B. Caesarean Section on request. *Saudi Med J* 2004; 25:1820-3.
17. Rizvi HJ, Chaudri. SR Changing pattern of caesarean section, *Aust NZ J Obstet Gynecol* 1988:263-6.
18. Cecatti JG, Pires HM, Faundes A, Duarte Osis MJ. Factors associated with vaginal birth after previous caesarean section in Brazilian women. *Rev Panam Salud Publica* 2005;18:107-13.
19. Simoes E, Kunz S, Bosing-Schwenkglens M, Schmah FW. Occupation and risk of cesarean section: study based on Baden Wurttemberg, Germany: *Arch Gynecol Obstet* 2005;27:338-42.
20. Najmi RS. An audit of caesarean section carried out in a tertiary care Maternity unit. *J Coll Physicians Surg Pak* 1999;10:24-26.
21. Ruby N. Maternal complications associated with caesarean section: One year retrospective study. *J Postgrad Med Inst* 1998;14:83-9
22. .Bano F. Indications, complications and fetal outcome: A comparison between emergency and elective caesarean section. *Pak J Med Sci* 1995;II:277-82.
23. Parazini F, Pipotta N, Vecchia CL, Fedde S. Determinants of caesarean section in Italy. *Br J Obstet and Gynecol* 1992;99:203-06.
24. Gonen R, Tamir A, Degani S, Ohel G. Variables associated with successful vaginal birth after one caesarean section ; a proposed vaginal birth after one caesarean section score. *Am J Perinatol* 2004;21:447-53.
25. Yogov Y, Ben H, Aroush A, Sahav E, Harovitz E, Hod M, et al. Induction of labour with prostoglanation E, in women with previous caesarean section and unfavorable cervix. *Eur J Obstet Gynecol* 2004 ;116:173-6.
26. Danielian PJ, Wang J, Hall MH. Long term outcome by method of deliveries of fetuses in breech presentations at term. Population based follow up. *BMJ* 1996;312:1451-3.

---

Authors:

1. Dr. Gulfareen Haider, FCPS, M.S
2. Dr. Nishat Zehra, FCPS
3. Dr. Aftab Afroz Munir, FRCOG
4. Dr. Ambreen Haider, MBBS
- 1-3: Department of Obstetrics & Gynecology  
Isra University Hospital,  
Hala Road,  
Hyderabad - Sindh, Pakistan.
- 4: Department of Cardiology,  
LUMHS,  
Hyderabad - Sindh, Pakistan.