Original Article

An Audit of Caesarean Section in Fauji Foundation Hospital Rawalpindi

Nosheen Akhtar [1], Zartaj Hayat [2], Maria Ashraf [3]

[1]Senior Registrar, [2]Professor of Obs & Gynae, [3]Post graduate trainee
[1-3]Department of Obstetrics and Gynaecology, Foundation University Medical College Fauji Foundation Hospital Rawalpindi,

***Address of Correspondence**: Dr. Nosheen Akhtar, Senior Registrar Obs & Gynae, Foundation University Medical College Fauji Foundation Hospital Rawalpindi, Pakistan*
Email: drnosheen08@gmail.com

Abstract

Objectives: Caesarean section (CS) rates are increasing worldwide. A retrospective audit was performed to analyze the rate and the frequency of different indications of cesarean sections in gynae and obs unit II Fauji Foundation Hospital Rawalpindi and compare it with standard guidelines. The audit will help to optimize cesarean section rate by identifying the areas where adherence to standard guidelines would have avoided a cesarean section.

Methodology: This is a retrospective audit, conducted in the department of obstetrics and gynecology unit II Fauji Foundation Hospital Rawalpindi from 1st Jan 2015 to 31st Dec 2015. All patients delivered by cesarean section at gestation age > 32 weeks were included in the study. The relevant clinical data were recorded from hospital MEDIX ™ and labour room record register. The data was analyzed and the results were compared with NICE guidelines. NICE guidelines are evidence-based guidance developed by The National Institute for Health and Care Excellence (NICE) to improve outcomes for people using health services.

Results: There were 761 deliveries in the study period; out of these 379 were CS, giving CS rate of 49.8%. Commonest indication for cesarean section was > one previous cesarean section (36%). Other indications in descending order were fetal distress (11.3 %), Fetal growth restriction (FGR)(10%), hypertensive disorders (7%), previous one scar (6%), failed induction of labor (6 %), maternal wish (5.3%) and breech presentation (5%) respectively. The high cesarean section rate is attributed partly to the fact that this hospital a tertiary care referral hospital, however, analyzing the data in detail and keeping NICE guidelines as standard, we find that in almost all indications of cesarean sections except for > one previous cesarean section there was a space to avoid cesarean section without compromising maternal and fetal safety.

Conclusion: Strict adherence to guidelines is required to maintain optimal cesarean section rate in low resource country like Pakistan. Regular audit is the key to this process and it should be a routine practice in our teaching hospitals.

Keywords: Fetal distress, fetal growth restriction, failed induction of labour.

Cite this article as:.Akhtar N, Hayat Z, Ashraf M. An Audit of Cesarean Section in Fauji Foundation Hospital Rawalpindi.J. Soc. Obstet. Gynaecol. Pak. 2016; Vol 6(4):182-186.

Introduction

Caesarean Section is a commonly employed surgical procedure whereby a fetus is delivered through an abdominal and uterine incision. The procedure has contributed immensely to save maternal lives. When medically indicated it can effectively prevent maternal and perinatal mortality and morbidity.[1] However as with any other surgery, caesarean section is also associated

Authorship Contribution: [1]Substantial contributions to conception and design, Drafting the article or revising it critically for important intellectual content, Interpretation, analysis and discussion, acquisition of data. [2,3] Interpretation, analysis and discussion, acquisition of data, Drafting the article or revising it critically for important intellectual content; .

Funding Source: none
Conflict of Interest: none

Received: Dec 12, 2016
Revised : Jan 2, 2017
Accepted: Jan 7, 2017

with short and long-term risks which can extend many years beyond the current delivery and affect the health of the woman, her child, and future pregnancies.[2, 3, 4] For the last few decades CS rate is increased in both developed and developing countries for a variety of reasons.[5,6] The rising rate has raised concerns as caesarean section births are not only associated with potentially negative consequences for maternal and infant health[7,8] but also an economic burden on the health system.[9] Keeping risk-benefit ratio in view, WHO issued a consensus statement suggesting there were no additional health benefits associated with a CS rate above 10–15%.[10]

In our country situation is somewhat complex. We are lacking the proper structure of health care in obstetrics. A big proportion of our patients are being delivered by untrained traditional birth attendants and the high maternal mortality rate 170/100,000 is an indicator of poor obstetric care.[11] But at the same time statistics about the institutional deliveries show a high rate of cesarean section in Pakistan even in the public hospitals.[12, 13] The high rates of cesarean section in public tertiary hospitals are often being justified by the significant number of referrals of high-risk patients from periphery hospitals however the exact cesarean section rate in Pakistan is unknown owing to the lack of proper statistics at national level. Huge no of private hospitals are adding to cesarean sections without any surveillance. Economical benefits, time management and risk minimizing behavior are the main drives for a physician to opt for cesarean delivery. The private practice is considered to be a window to the increased rates of the caesarean section being performed worldwide.[14] The high rate of cesarean sections needs to be checked by regular audits as a part of standard care management.

We conducted a retrospective audit of cesarean sections in our hospital to critically analyze the areas where we can improve our practices in accordance with guidelines to keep the rate of cesarean section minimum without compromising fetal and maternal safety. As NICE guidelines are used as a standard, we compared our practice with NICE guidelines.

Methodology

This retrospective audit was conducted in the department of Obs/Gynae unit II, Fauji Foundation Hospital Rawalpindi, Pakistan from 1st Jan 2015 to 31st Dec 2015. All patients delivered by cesarean section at gestation age > 32 weeks were included in the study. The demographic details of all women were recorded from MEDIX ™ and labour room record register. All variables like age, parity recording their and indication for CS noted. Results were calculated in terms of percentage and frequency. The data was analyzed and the results were compared with NICE guidelines. NICE guidelines are evidence-based guidance developed by The National Institute For Health And Care Excellence (NICE) to improve outcomes for people using health services. These guidelines are also in use in our country as standard care, owing to the absence of any proper local guidelines.

Operational definitions:

Fetal growth restriction: is defined as fetus with estimated fetal weight below 10th centile for the gestational age along with oligohydramnios and reduced interval growth.

Failed induction of labour: Failed induction of labour is defined as no onset of labour pains after a maximum dose of the gland in per vaginal i.e. 3 mg doses 6 hours apart two doses.

Fetal distress: Fetal distress in labour in defined as fetal scalp pH < 7.2 in first stage of labour and < 7.15 in second stage of labour.

The National Institute for Clinical Excellence clinical (NICE) guidelines: NICE is part of the National Health Service (NHS) in the UK. NICE guidelines are guidance on treatments and care based on the best available evidence and effective use of resources which help health care professionals to provide standard care to the people.

Results

The mean age of patient undergoing cesarean section was 30 years. Regarding parity; maximum number of patient were multigravida (Figure 1)

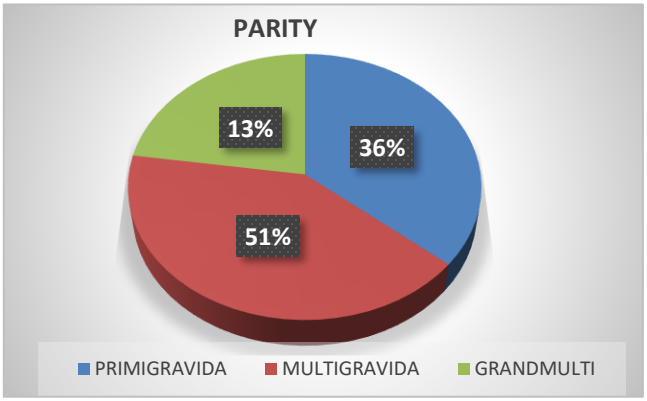

Figure 1: Parity

There were 761 deliveries in the study period out of these 379 were CS. (Figure 2)

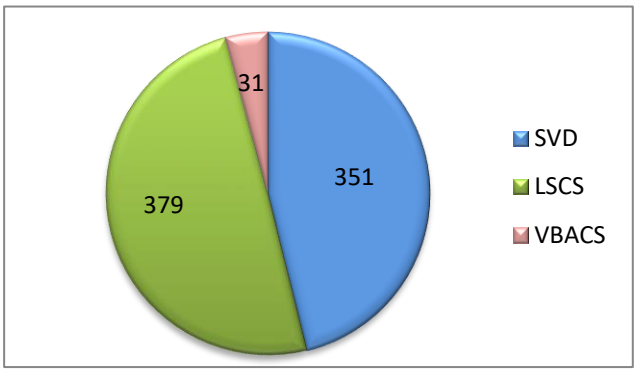

Figure 2: Mode of delivery

Among cesarean sections; 232 (61.2 %) were elective cesarean section and 147 (38.8%) were emergency cesarean section.

Commonest indication for cesarean section was > one previous cesarean section (36%). Other common indications in descending order were fetal distress, FGR, hypertensive disorders, previous one scar, failed IOL, maternal wish and breech presentation respectively. (Table I)

Table I: Indications of cesarean section

Indication	Frequency	Percentage
Repeat cesarean section >1	136	36%
Fetal distress	43	11%
FGR/ deranged Doppler	37	10%
Hypertensive disorders	26	7%
Failed IOL	24	6%
Previous 1 scar	23	6%
Maternal wish	20	5%
Malpresentation	18	5%
Uterine dystocia	16	4%
Placenta previa major	11	3%
GDM	09	2%
CPD	06	2 %
BOH	04	1%
Placental abruption	03	1%
Chorioamnionitis	03	1%

Among repeat cesarean sections for > 1 CS, previous 2 scars were n=68; previous 3 scars were n=59 and previous 4 scars were n=9. For repeat CS for previous 1 CS, previous 1 scar due to CPD were n=4, refusal of trial n=10, CS at some private hospital with no previous record available n=5, previous 1 scar with associated complication was n= 4. cases of bladder injury. In both cases injury was recognized intra operatively and repaired at the same time involving urologist.

Discussion

Cesarean section rate in our hospital was found to be high 49.8%. The high cesarean section rate may be attributed partly to the referral of high risk pregnancies however other factors may also be involved. When compared to other tertiary care hospitals, our CS rate was higher than that reported by researchers in Holy Family Hospital Rawalpindi (37.7%), DOW university Karachi (28%)[12,13] and Yale-New Haven Hospital (36.5%)[(15)], but lower than CS rate reported in CMH Rawalpindi(56%)[16] and in china showing CS rate 56% in tertiary care hospital.[17]

Regarding indications repeat cesarean sections for more than one cesarean section were the major constituent of cesarean sections (36%) and this is comparable to others studies[13,14] while another study showed fetal distress the leading cause of cesarean section.[12,15] Other indications were more or less same with the exception of FGR and hypertensive disorders which comprise 10% and 7% of cesarean section in our hospital. Study at Yale new haven hospital also showed hypertensive disorders to be responsible for 10% of CS, but in other hospitals, they contributed to around 2% of the cesarean section each.[12, 13, 16]

The critical evaluation was done to see the determinants of high cesarean section rate each factor was evaluated independently and compared with NICE guidelines. Fetal distress is the second most common indication of cesarean sections in our hospital. Fetal distress is further categorized as non-reactive CTG & grade 3 meconium in our data. NICE recommends that CTG alone should never be used for decision making and fetal blood sampling is recommended procedure in all cases having a suspect of fetal compromise.[18, 19] In the absence of availability of fetal blood sampling the only option left is to resort to cesarean section.[18] If labor monitoring were supplemented by fetal blood sampling many cesarean sections would have been avoided.

Similarly, for FGR, the obstetrician has a low threshold for cesarean section owing to limited availability of fetal monitoring. Availability of better fetal monitoring gadgets like fetal blood sampling would allow the obstetrician to give trail of labor in selected cases of FGR.[18]

For Hypertensive disorder, NICE recommends that mode of delivery should be decided by consultant according to the clinical scenario.[20] As many of these

cases are referral cases clinical condition very often necessitate cesarean delivery to save a maternal life.

Breech presentation accounts for 5% of cesarean section and no patient was given a trial of external cephalic version (ECV) although NICE recommends that all breech presentation must be given a trial of ECV after exclusion of contraindication however if there is some contraindication to ECV or it fails then planned CS should be offered because elective cesarean section for breech presentation reduces perinatal morbidity and mortality.[18, 21]

Failed IOL was also evaluated in detail and it was revealed that among IOL for post dates leading to caesarean section, IOL were mostly done at 40 + weeks but prior to 41 weeks and membrane sweeping was not offered in routine for postdate pregnancies at 40-40+6 weeks. According to NICE guidelines for induction of labour, it is recommended that IOL for postdates should not be done prior to 40+ 6 weeks.[22] Membranes sweeping should be offered at 40-40+6 weeks to improve the chances of spontaneous labour.[22] Similarly PROM were induced immediately (within 6 hour) even in the absence of chorioamnionitis. This was also in contradiction to NICE guidelines for induction of labour which recommends waiting for spontaneous labour after PROM for 24 hours in the absence of chorioamnionitis.[22] Interval induction was not considered as an alternative option in any case although NICE recommends it in selective cases of failed IOL leaving final decision on consultant obstetrician.

Caesarean section for previous one scar constitute 6 % of cases, these are either those who refuse trial of labour or having a caesarean section at some private hospital with no record available, otherwise previous one scar is given trial of labour. This practice is in accordance with NICE guidelines. NICE recommend that patient should be counselled in detail about risk of a trial of labour after previous one caesarean section.[22] As there is no regulatory body in our country any patient underwent a caesarean section at some unknown private setup with no details of surgical notes available, the detailed counselling is not possible thus necessitating the avoidance of trial of labour after previous one scar.

Refusal of trial of labour during labour could have been improved by provision of epidural analgesia in few percentages of cases. These were patient who refuse trial of labour due to inadequate analgesia as NICE guidelines for intrapartum care recommend that patient should be given adequate analgesia.[19]

Regarding maternal wish it should be discouraged by detailed counselling and explaining mother about the risk of caesarean section and this practice is optimally practiced in the unit NICE states the woman requesting for elective CS should be counselled in detail about risks of CS by detailed counselling and if patient does not agree to vaginal birth then offer a planned CS.[18]

Keeping NICE guidelines as a standard, following recommendations were made to improve the outcome of induction using this audit.

- Intrapartum fetal monitoring should be supplemented with fetal blood sampling as the positive predictive value of CTG is low.
- The uncomplicated breech presentation should be offered ECV.
- IOL for postdates should be at 41 weeks supplemented by sweeping membranes 40-40+6 weeks
- In PROM in the absence of chorioamnionitis, 24 hours may be given prior to trial of labour
- Adequate support and analgesia should be provided during labor.

Cesarean section rate was high in our audit. Data evaluation gives clue to certain area where adherence to NICE guidelines may help in reducing cesarean section rate. It is required to implement the recommendations and re-audit in the near future after implementation of the recommendations to see improvement in caesarean section rate

Conclusion

Strict adherence to guidelines is required to maintain optimal cesarean section rate in low resource country like Pakistan. Regular audit is the key for this process and it should be a routine practice in our teaching hospitals

References

1. Hannah ME, Hannah WJ, Hewson SA, Hodnett ED, Saigal S, Willan AR. Planned caesarean section versus planned vaginal birth for breech presentation at term: a randomised multicentre trial. Term Breech Trial Collaborative Group. Lancet. 2000;356(9239):1375-1383.
2. Lumbiganon P, Laopaiboon M, Gulmezoglu AM, Souza JP, Taneepanichskul S, Ruyan P, et al. Method of delivery and pregnancy outcomes in Asia: the WHO global survey on maternal and perinatal health 2007- 08. Lancet. 2010;375:490-499.

3. Villar J, Carroli G, Zavaleta N, Donner A, Wojdyla D, Faundes A, et al. Maternal and neonatal individual risks and benefits associated with caesarean delivery: multicentre prospective study. BMJ. 2007;335(7628):1025.
4. Souza JP, Gulmezoglu A, Lumbiganon P, Laopaiboon M, Carroli G, Fawole B, et al. Caesarean section without medical indications is associated with an increased risk of adverse short-term maternal outcomes: the 2004-2008 WHO Global Survey on Maternal and Perinatal Health. BMC medicine. 2010;8(1):71.
5. Vogel JP, Betrán AP, Vindevoghel N, Souza JP, Torloni MR, Zhang J, Tunçalp Ö, Mori R, Morisaki N, Ortiz-Panozo E, Hernandez B. Use of the Robson classification to assess caesarean section trends in 21 countries: a secondary analysis of two WHO multicountry surveys. The Lancet Global health. 2015 ;3(5):e260-70.
6. Ye J, Betran AP, Vela MG, Souza JP, Zhang J. Searching for the Optimal Rate of Medically Necessary Cesarean Delivery. Birth. 2014;41(3):237-43.
7. Victora CG, Barros FC. Beware: unnecessary caesarean sections may be hazardous. Lancet. 2006;367(9525):1796-1797.
8. Mi J, Liu F. Rate of caesarean section is alarming in China. Lancet. 2014;383(9927):1463-4.
9. Gibbons L, Belizan JM, Lauer JA, Betran AP, Merialdi M, Althabe F. Inequities in the use of cesarean section deliveries in the world. Am J Obstet Gynecol. 2012;206(4):331.
10. World Health Organization. Appropriate technology for birth. Lancet 1985; 436-437.[citation]
11. WHO, UNICEF, UNFPA. The World Bank, the United Nations Population Division. Trends in Maternal Mortality 1990 to 2013: Estimates by the WHO, UNICEF, UNFPA. The World Bank and the United Nations Population
12. Syed S, Arshad F, Bano N, Chaudry R, Shaheen F,Rising Caesarean Section Rate: an Obstetric Epidemic. JSOGP. 2014; 4(3):146-150
13. Krim F, Ghazi A, Ali T, Aslam R, Afreen U, Farhat R. Trends and Determinants of Caesarean Sectio. Journal of surgery Pakistan. 2011;16(1):22-27.
14. Naidoo N, Moodley J. Rising rates of Caesarean sections: an audit of Caesarean sections in a specialist private practice. SA Fam Pract. 2009; 51(3):254-258
15. Barber EL[1], Lundsberg LS, Belanger K, Pettker CM, Funai EF, Illuzzi JL.Indications contributing to the increasing cesarean delivery rate. Obstet Gynecol. 2011 Jul;118(1):29-38
16. Jabeen J, Mansoor MH, Mansoor A. Analysis of Indications of Caesarean Sections. JRMC. 2013;17(1):101-103
17. Hou L, Li G, Zou L, Li C, Chen Y, Yuan Y, et al. Cesarean delivery rate and indications in mainland China: a cross sectional study . Zhonghua Fu Chan Ke Za Zhi. 2014 Oct; 49(10):728-735.
18. National Institute for Health and Clinical Excellence. Cesarean section: NICE clinical guidelines, 2011
19. National Institute for Health and Clinical Excellence. Intrapartum care for healthy women and babies: NICE clinical guidelines, Dec 2014.
20. National Institute for Health and Clinical Excellence. Hypertensive Disorders: NICE Clinical Guideline 70, 2008
21. National Institute for Health and Clinical Excellence. Antenatal care. NICE Clinical Guideline Sep 2012.
22. National Institute for Health and Clinical Excellence. Induction of Labour: NICE Clinical Guideline 70, 2008.