Journal of Rawalpindi Medical College (JRMC); 2018;22(1): 71-75

Original Article

Rising Caesarean Section Rate – Whether Women Choice, Doctor Preference or Clinical /Non Clinical Indications are Responsible.

Noreen Majeed ,Shabana Kalsoom,Humera Rani and Shamsa Tariq
Department of Obstetrics &Gynaecology, Wah Medical College, Wah Cantt.

Abstract

Background : To determine the factors responsible for the rise in caesarean section rates whether women choice, doctor preference or clinical /non clinical indications are responsible.

Methods: In this observational study antenatal patients of any age ,with any previous obstetric history and parity were asked about their wishes regarding mode of deliveries in the current pregnancy irrespective of any clinical consideration. Actual indications for caesarean done in the next 3 months were noted down and rate of caesarean and frequencies for each caesarean indication were calculated. Discussions with doctors regarding reasons for caesarean decisions in their practices were done and percentages were calculated for major indications of caesarean in their practice.

Results:Among 558 antenatal women, majority (74.1%) wished for vaginal delivery. Total caesarean rate in 3 months was 42.8%. Previous one caesareans(24.67%) or previous multiple caesareans(21.83) were the commonest indications. Clinicians revealed suspected fetal compromise(intrapartum)(76.6%), previous one caesareans(66.6%) and previous multiple caesareans(50%) as the common indications. No doctor agreed on economic incentive being the sole reason for caesarean in their practice.

Conclusion: Majority of women wish to deliver vaginally. The main reason for rise in caesarean rate are clinical indications like previous one and multiple caesareans , suspected fetal compromise(intrapartum) and failure to progress. Risk minimizing behaviour is prominent among non clinical reasons for caesarean delivery.

Key Words: Mode of delivery, Vaginal delivery, Caesarean birth

Introduction

Caesarean section, is a major surgery in which incision is given in the abdomen and uterus of the mother. Baby is delivered through this incision rather than the normal passage(vaginally).[1] It is performed when a baby cannot be delivered vaginally or if there is greater risk to the mother and baby in vaginal delivery than abdominal delivery.[2] As it is a surgical procedure ,it has got immediate and long term risks for both the mother and the baby,not to mention the economic burden on society. [3,4] There can be injury to the visceras,haemorrhage ,infection,thromboembolism and future reproductive complications like placenta previa,abnormally adherent placenta, uterine rupture and intrauterine death in women.[5,6] There is increased risk of transient tachypnea of new born,neonatal intensive care unit admissions, asthma and obesity in the children. [7] Caesarean section can cause severe morbidity or even death at centres with suboptimal surgical facilities and skills. While, on the other hand caesarean section saves the lives of babies and mothers in complicated and medically justified cases and the benefit of the procedure outweighs its risks.[8]

Since 1985 ,World Health Organisation(WHO) had declared ideal rate for caesarean section to be 10-15% and that no region is justified to have caesarean rates above this. [9] The caesarean section rates are continuously increasing with marked variation nationally and internationally. [10] Data from 150 countries show that 18.6 % of all births occur by caesarean. One women in five around the world is giving birth by caesarean and the average annual rate of increase is 4.4%.The rate of increase in caesarean from 1990-2014 region wise are ,Asia from 4.4%-19.5%,Europe from 11.2 -25%, Latin America–from 22.8-42.2%,Northern America,22.3-32.3%.[11] Pakistan faces the same situation with increased caesarean rates upto 21%-45% in government tertiary care hospitals and even >50 % in private hospitals.[12] It has become a global concern and an issue of debate in maternity care.

Due to advances in anaesthesia and effective antibiotics, immediate risks of caesarean has decreased to the extent that caesarean delivery is thought to be as safe as vaginal delivery while ignoring the long term risks to the baby and mother .Immediate risks of caesarean are still a threat in poor socioeconomic

countries.Concerns have been expressed by authorities about rise in caesarean and their negative effects on maternal and child health.In this context WHO revisited the 1985 recommendation and after a systematic review concluded that there is no benefit to the mother or the baby by unnecessary caesarean section and if caesarean rate rises above 10%, it is not helpful in reducing maternal and neonatal mortality.[13] Statistics show that unnecessary caesareans are being performed on low risk women and mothers and babies are being exposed to avoidable risks.[8] We need to realize the factors responsible for increase in caesarean rates and reduce unnecessary caesareans. [14] Many factors for the rise have been implicated but the most discussed ones are, increased demand of caesarean from the women and increased willingness of the doctors to provide it. It is assumed that more women are requesting caesareans to avoid labour pains ,fear of birth, belief that it is safer for the baby or due to social reasons like delivery by a particular doctor or time or more doctors are willing to provide it to avoid medical litigation ,save their time and earn more money.It might also be that there are genuine clinical indications responsible for the rise in caesarean rate.[15]

Wah is a semiurban area and drains patients from peripheries around it like Sanjwal ,Hawalian and Bakhar. The caesarean rate in Wah also turns out to be high.These three most probable factors were explored in this study to understand the rise in caesarean section locally in Wah.

Patients and Methods

This descriptive cross sectional study was carried out in Izzat Ali Shah Hospital(IASH) affiliated with Wah Medical College ,Wah Cantt over the period of 6 months, April 2014-September 2014 by using convenient sampling technique. Pregnant women of all ages with any obstetric history and parity ,attending antenatal clinic were included. Indications of all caesareans(El&Em) done in months of July,August and September 2014 and discussions with Wah based doctors(working in IASH and other Wah based doctors)) over the period of 6 months were included.Those antenatal women and doctors who refused for interviews were excluded from the study. Women were interviewed regarding preference for mode of delivery irrespective of any clinical or financial consideration after obtaining their consent. Permission from the ethical committee was taken. Discussions were carried out with 30 Wah based doctors(14 from IASH &16) from Wah hospitals other than IASH) regarding major reasons for decision of caesarean sections in their practice(hospital and private).

Results

Mean age of patients was 27 ±5.9 years ranging from 17-38years. Among 558 antenatal women, majority (74.1%) wished for vaginal delivery (Table 1). Main indications for caesareans done in 3 months were clinical , i.e., previous one caesareans(24.67%), previous multiple caesareans(21.83), suspected fetal compromise(intrapartum)(14.84%) (Table 2)

Table 1- Preferences of mode of deliveries among antenatal women (n=558)

Preferences of Modes of deliveries Number	Percentage
Vaginal delivery (n=414)	74.19%
Caesarean delivery (n=94)	16.84%
Equivocal (n=50)	8.96%

Table -2. Preferences of mode of deliveries among antenatal women with different obstetric history and parity.

Patients	SVD	LSCS	Equivocal
Primigravida(n=188)	73.4%	13.82%	12.7%
Multigravida(n=176)	82.95%	12.5%	4.54%
Previous caesarean (1 and multiple)(n=172)	66.27%	25.58%	8.13%
Withprevious caesarean &vaginaldelivery (n=22)	72.72%	9%	18.18%

Table-3:Rate of caesarean in three months

Characteristics	Number/Percentage
Total no of Deliveries in July, August and September	1070
Total no of caesarean(Em& El) in July, August and September	458
Average rate of total caesarean in 3 months	42.80%
Average rate of emergency(Em) caesarean in 3months(n=288)	62.88%
Average rate of elective caesarean in 3 months(n=170)	37.11%

Total caesarean rate in 3 months was 42.8% (Table 3). Discussions with doctors revealed clinical indications like suspected fetal compromise(intrapartum)(76.6%), previous one caesareans (66.6%), previous multiple

Table -4. Indications for caesarean section

Caesarean indications	No (%)
Previous one caesarean	113(24.67)
Previous multiple caesareans	100(21.83)
Suspected fetal compromise	68(14.84%)
Failed progress of labour	42(9.17%)
Antepartum heamorrhage(Placenta previa& abruption)	30(6.55%)
Failed induction of labour(IOL)	20 (4.36%)
Malpresentation(breech & transverse lie)	18(3.93%)
Suspicious cardiotocography(CTG)	17 (3.71%)
Hypertensive Disorders	13 (2.83%)
High risk Pregnancy	12(2.62%)
Multiple Pregnancy	8(1.74%)
Intrauterine growth retardation(IUGR)&oligohydramnios	6(1.31%)
2nd Stage failure	4(0.87%)
Previous Myomectomy	1(0.21%)
Maternal request(primary caesarean)	1(0.21%)
Cord prolapse	1 (0.21%)
Previous perineal Repair	1 (0.21%)
Unable to remove cervical cerclage	1(0.21%)
Active genital Herpes	1(0.21%)
Right inguinal Pain	1 (0.21%)

Table 5. caesarean deliveries-Clinical indications

Caesarean indications	No (%)
Suspected fetal compromise (Intrapartum)	23 (76.6%)
Previous one Caesarean	20 (66.66)
Previous multiple caesarean	15 (50.0%)
Suspicious CTG	12 (40%)
Failure to progress	12 (40%)
Failed Induction of labour	10 (33.33%)
Hypertensive disorders	9 (30%)
Placenta previa/abruption	9 (30%)
Intrauterine growth retardation and oligohydramnios	8 (26.6%)
Multiple pregnancy	7 (23.3%)
High risk pregnancies	6 (20%)
Malpresentations	5 (16.6%)
Second stage failure	4 (13.3%)
Cord prolapse	2 (6.66%)
Macrosomia	2 (6.66%)
Cephalopelvic disproportion	2 (6.66%)
Non obstetric factors Ie, previous myomectomy,perineal repair.etc	1 (3.33%)

Table-6: Non clinical indications of caesarean deliveries

Risk minimizing behaviour	12 (33.33%)
Time management	8 (26.66%)
Maternal Request (primary)	2 (6.66)
Fear of litigation	10%
Economic incentives	0

caesareans(50%), failure to progress and suspicious CTG(40%both) and few nonclinical indications like, risk minimizing behaviour(33.3%),time management(26.6%),fear of litigation (10%) and maternal request(6.66%) to be the reasons for caesarean decisions in their practices (Table 4&5). No doctor agreed on economic incentive being the sole reason for caesarean in their practice (Table 6).

Discussion

Most of the women are keen to deliver vaginally irrespective of parity and previous obstetric history.[16,17] A local study in Hyderabad Sindh reflected strong commitment of women towards vaginal delivery.[18] The caesarean rate at IASH was 42.8% which is quite high. The emergency (Em) caesarean rate was higher than that of elective (El) caesarean.Similar results were found by Dr C R Leitch,who reported that caesarean rate is rising.[14] Same results were found in a study in Karachi ,while contrary results in a study in Peshawer.[19,20]

According to WHO we should not strive for a specific caesarean rate but provide caesarean to those women who have genuine clinical indication for it and discourage unnecessary caesarean sections. Further we cannot compare suggested population based caesarean rate with that of health care facility because rates of various health care facility differ widely as they serve different case mix of obstetric population and have different clinical management protocols. The aim should be to ensure that women and babies who need delivery by caesarean section receive it and that those who do not are saved from unnecessary intervention.[13] The major reasons for caesarean section turned out to be previous one caesarean , suspected fetal compromise(intrapartum) followed by previous multiple caesarean sections , failure to progress and suspicious CTG among the actual indications of the caesarean done and after discussions with the doctors about their reasons for caesarean decision.The rest of the indications did not contribute much to the increased caesarean rate.

Discussions with the doctors also revealed non medical factors like, women not willing for vaginal birth after caesarean(VBAC) due to fear of repeat emergency caesarean, difficulty arranging for an emergency caesarean section within a short time & fear of litigation may cause a doctor to favour caesarean over normal delivery especially in the private practice. No doctor agreed that they would perform caesarean solely for financial gain.The no of patients (113)with previous one caesarean undergoing repeat caesarean in our study were the highest .Not to mention the no of multiple previous caesareans .We need to reduce the cases of previous one caesareans and promote more VBACs. Once a baby is delivered by caesarean, the chances of repeat caesarean in subsequent pregnancies are increased. The solution is toreduce the primary caesarean section rate and target its causes like avoiding undue inductions of labour, proper management of presumed fetal compromise and failure to progress.

If fetal distress is detected, simple measures like, correcting caval compression, maternal facial oxygen, correcting hyperstimulation by tocolytics should be practiced.Intermittent fetal heart rate auscultation should be practised in low risk pregnancies while reserving electronic fetal heart rate monitoring(EFM)for high risk cases.There is significant reduction in short term neonatal morbidity and perinatal deaths due to hypoxia but a significant increase in caesarean delivery rates with the use of EFM .Training for correct interpretation of cardiotocography (CTG)&performing fetal scalp blood sampling and its implementation to estimate pH significantly reduces rates of caesarean delivery.While using intrapartum fetal cardiotocography (CTG),the fetal heart rate graph should be correlated with the tocodynameter graph to avoid unnecessary intervention. [21]

Partogram should be used for intrapartum monitoring as it prevents prolonged labour, reduces operative intervention and improves neonatal outcome. Four hours of grace should be allowed after crossing the alert line as it reduces the need for augmentation and caesarean delivery. [21]

ECV should be practiced for breech and transverse lie and doctors should be trained and encouraged in this context. ECV halves the chances of abnormal presentation at delivery and reduces the risk of caesarean.[22] Conducting breech delivery in suitable cases should be encouraged.Providing good intrapartum analgesia especially epidural, where possible should be adapted.

Patients with previous one caesarean have planned repeat caesarean delivery(PRCD) most of the time. Even the suitable cases are not induced or augmented due to fear of scar rupture or patient refuses the trial of vaginal birth after caesarean (VBAC) due to fear of repeat emergency caesarean. About 9 in 10 women with previous one caesarean section are having repeat caesarean section.They could have the option of vaginal delivery after caesarean but did not have because providers were not willing. [23] Our results also show that majority of women with previous caesareans wished for vaginal delivery. In our study, there were 122 cases of previous one and only 15 VBACS were attempted ,all 15 had spontaneous onset of labour (only 9 were successful)which is a very low rate.One hundred and thirteen patients with previous one caesarean had repeat caesarean ,among which 20 patients opted for PRCD ,6 had failed VBAC , 35 had associated risk factors which favoured PRCD .Rest of the 52 patients with previous one caesarean being the sole risk factor could have been given the chance of vaginal delivery .Likewise in majority of hospitals, VBAC is conducted only if the patient comes with spontaneous onset of labour as one is afraid to induce or augment previous one scar. Although induction and augmentation increases the risk of scar rupture, they are not contraindicated in suitable cases with previous caesarean delivery. Induction of labour (IOL) with mechanical methods carry lower risks .It is suggested that low dose prostaglandin E2 is a safe option for IOL in women undergoing VBAC.[24] Antenatal patients (especially with previous one LSCS)should be fully counselled regarding immediate as well as long term risks of caesarean section.This aspect is obviously neglected due to shortage of manpower and busy OPD's.

Pakistan is spending only 0.5-0.8% of its GDP(Gross domestic product) on health ,while WHO benchmark of health expenditure is atleast 6% of the GDP.[25] Government must develop maternal and child health care infrastructure. Payment schedules for the caesarean and vaginal deliveries should be similar, rather there should be incentives /extra pay for the providers who patiently support a longer vaginal birth. Trained midwives should be made available in the hospitals for one to one monitoring and to conduct vaginal deliveries in low risk cases rather than doctors being held responsible for each patient monitoring and delivery. Doctors should be called when there is any problem. In this way one would be able to deal with high risk cases efficiently and will have more patience to achieve vaginal birth.

WHO recommends adaption of Robson Classification system. By this we can assess ,monitor and compare rates of caesarean sections within and between different health care facilities and areas. It is a 10 group classification system which places patients in different groups on the basis of few basic obstetric characteristics on admission. WHO recommends its use globally. Steps taken in these directions will definitely contribute in reducing caesarean section rate.

Conclusion

1.Majority of our women wish for vaginal delivery but inspite of that the caesarean rate is quite high.

2. Main causes for the rise in caesarean rate are clinical, ie, increased cases of previous one and multiple caesareans , suspected fetal compromise(intrapartum)and failure to progress .

3. Though risk minimizing behaviour on doctors part is prominent, among non clinical factors, the indications responsible for the rise in caesarean rate are mostly preventable.

4.The key is to prevent the unnecessary primary caesareans by adapting standard intrapartum care & to promote more vaginal births after caesarean section (VBACs).

5.Protection should be given to the caregivers by the concerned hospital administrations regarding medical litigation. Good doctor patient communication and doctor commitment to reduce caesarean rate is needed.

6.Support of government is crucial in this context by having regular checks especially on private hospitals and by improving delivery related infrastructure and manpower.

References

1. American College of Obstetricians and Gynecologists .Caesarean birth(C- section), FAQ006June1,2016.http//www.acog.org.
2. LuesleyDM and Baker PN,Obstetrics and Gynaecology an evidence –based text for MRCOG,second edition, Edward Arnold Publishers, London,2010,chapter 31,Caesarean Section,p403.
3. Mi J, Liu F. Rate of caesarean section is alarming in China. The Lancet 2014;;383(9927):1463-66.
4. Connolly ML. High caesarean section figures in Northern Ireland questioned: BBC News Northern Ireland; 2014 . http://www.bbc.
5. Shi Y, Jiang Y, Zeng Q, Yuan Y, Yin H, Chang C. Influencing factors associated with the mode of birth among childbearing women in Hunan Province: a cross-sectional study in China. BMC(Biomed Central) pregnancy and childbirth 2016;16(1):108 -12.
6. Mascarello KC, Horta BL, Silveira MF. Maternal complications and cesarean section without indication: systematic review and meta-analysis. Revista de saudepublica 2017;;51:105 -08.
7. NICE GuidelineCG132-Surveillance report 2017 –Caesarean Section (2011),Commentary on selected new evidence ,2017.
8. Mu S, Dip C. Highest C-Section rates by country; Birth ,2016Z;.BellyBelly htm.
9. Moore B. Appropriate technology for birth. The Lancet 1985;326(8458):787-90.
10. KennyLC,MyersJE.ObstetricsbyTenTeachers,20thedition,CRCPress,Taylor&Francis group Boca Raton ,London,New York,2017;245.
11. Betrán AP, Ye J, Moller AB, Zhang J, Gülmezoglu AM. The increasing trend in caesarean section rates: global, regional and national estimates: 1990-2014. PloS one. 2016;11(2):e0148343.
12. Nazir S. Determinants of cesarean deliveries in Pakistan. Pakistan Institute of Development Economics 2015 .
13. WHO .WHO Statement On Caesarean Section. Department of Reproductive Health and Research. World Health Organization.Geneva,2015
14. Leitch CR, Walker JJ. The rise in caesarean section rate: the same indications but a lower threshold. International Journal of Obstetrics &Gynaecology 1998;105(6):621-26.
15. Childbirth connection .Why is the US Cesarean Section Rate so High. National Partnership for Women and Families (US), 2016;202.986.2600 www.NationalPartnership .org.
16. Dweik D, Girasek E, Töreki A, Mészáros G, Pál A. Women's antenatal preferences for delivery route in a setting with high cesarean section rates and a medically dominated maternity system. Acta Obstetricia et Gynecologica Scandinavica 2014;;93(4):408-15.
17. Loke AY, Davies L, Li SF. Factors influencing the decision that women make on their mode of delivery: the Health Belief Model. BMC health services research 2015;15(1):274 77.
18. Nisar N, Sohoo NA, Memon A. Knowledge, Attitude and preferences of pregnant women towards modes of delivery. JLUMHS 2009;8(03):228-31.
19. Bano R, Mushtaq A, Adhi M, Saleem MD, Saif A. Rates of caesarean section and trials and success of vaginal birth after caesarean sections in secondary care hospital. J Pak Med Assoc 2015 ;65(1):81-83.
20. Naeem M, Khan MZ, Abbas SH,KhanA,Adil M, Khan MU.Rate and indications of elective and emergency caesarean section.JAyub Med Coll, Abbotabad 2015;27(1);151-54.
21. Steer PJ, Weiner CP, Gonik B,Crowther CA.High Risk Pregnancy.4rth edition, 2011. Elsevier,UK, p1200.
22. Collins S, ArulkumaranS ,Hayes K,Jackson S, Impey L.Oxford Handbook of Obstetrics and Gynaecology.Third edition .Oxford University Press.Karachi.2013,chapter 2 Pregnancy Complications .84.
23. .Declercq ER, Sakala C, Corry MP, Applebaum S, Herrlich A. Listening to mothers III: Pregnancy and birth. New York: Childbirth Connection 2013;
24. RCOGguidelineno45.BirthafterCaesareanBirth,,2015:,1-6
25. Basharat R .Govt spends lessGDP on Health.TheNationE-.paper,Survey, 2017.https//nation.com.pk.