

An Audit of the Increasing Caesarean rate in a teaching hospital

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ABSTRACT

Aim: To evaluate the current caesarean section rate in a Sir Ganga Ram hospital, so as to determine the impact of increasing caesarean section rate on maternal and fetal morbidity and to reevaluate the indications of caesarean section.

Design: It is descriptive observational study carried out at Sir Ganga Ram Hospital Lahore from 1st January to 31st December 2013 (A3 years study).

Methods: All patients undergoing emergency and elective caesarean section in Sir Ganga Ram Hospital Lahore were included in this study during the said period. Their demographic characteristics were recorded including ; maternal age, parity, gestational age at presentation, medical history and indication of previous caesarean section ,.Details of antenatal care, history of labour; any intervention (prostaglandins/oxytocin ,vacuum/outlet forceps) and reason of referral if any. The maternal and fetal outcome was also recorded in terms of maternal and neonatal hospital ICU admission and stay.

Results: A total of 1,14,158 patients were admitted in Obstetric & Gynae department of Sir Ganga Ram Hospital during this 3 years study period and total no. of deliveries in the same period were 56026 out of which 35856(63.99%) were vaginal deliveries. Total number of caesarean sections conducted during this period were 20170(36.0% of the total deliveries).Out of these total caesarean sections:3875(6.9%)were elective and 16295(29.0%)were emergency caesarean sections. Maternal age ranged between 20 to 43 years with average age 25 years. Antenatal care was received by 5345(9.54%) patients and care givers included lady health visitors, general physicians, private practitioners and government hospitals. Educational status of mother ranged between uneducated to graduates. Indication for caesarean section was fetal distress in 14.2%, failure of progress 5.7%, preterm prelabour rupture of membranes in 10% Hypertensive disorders/ preclampsia 4.2%, other medical disorder 1%.The patients included: primigravida 40%, multigravida 60% withrepe at caesarean section in 60%. Breech presentation as indication of caesarean section included12.85% of the total. The maternal ICU admission was required in 1510patients (7.48%). 1207(5.90%) women required blood transfusion antenatal or due to postpartum hemorrhage.

Conclusion: Overall Caesarean section rate is 36% (with annual rate of 40- 47%) in this study which is high compared to WHO standards of 5%, 10%-15%. According to WHO. There is no empirical evidence for an optimum percentage. What matters most is that all women who need caesarean section receive them.

Keywords: Caesarean section, Caesarean section rate (CSR), repeat Caesarean section

INTRODUCTION

Caesarean delivery is extraction of the infant, placenta and membranes through an incision in maternal abdominal and uterine walls. Caesarean section rate (CSR) is number of caesarean births per 100 live births.

It is speculated that Julius Ceasar was born by Caesarean section in 1500 BC but there are controversies^{1,2,3,4}. According to Shahnameh an ancient Persian book, the hero Rostam was the first person who was born with this procedure².

In recent years the caesarean section rate has increased in different parts of the world, both in

developed and in developing countries. The CSR reflects rising healthcare coverage in different nations. While easy access to healthcare services is linked with the reported increase in the CSR, the rising trend of caesarean section also reflects, the procedure is performed without any medical indication in majority of the cases and thus contribute to higher rates of complications in both mother and neonate and economic burden on the healthcare system^{1,2}.

The CSR is 31% in developing country like Pakistan in 2009 which accounts for almost one third of all deliveries. Most Caesarean section in this country are performed because of suspected fetal distress or failure to progress according to a study in 2009⁴.

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Although there are clear clinical indications for caesarean delivery the acute and long term risks for both mother and infant have been the subject of intense debate for over 25 years. Caesarean delivery involves major abdominal surgery and is associated with higher rates of surgical complications: risk of anesthesia, bladder and bowel injuries, maternal re-hospitalization for postpartum hemorrhage and puerperal/ wound infection.

There are increased neonatal complications of prematurity and respiratory distress syndrome requiring neonatal intensive care admission. In addition to these increased complications the private hospital charges for caesarean delivery are almost double those for vaginal delivery imposing significant economic burdens on the healthcare system. Thus the justification for the increasing CSR is difficult to prove, not only in economic terms but also in terms of fetal and maternal morbidity and mortality. The purpose of this study was to know the current CSR in our hospital and evaluate and justify the factors leading to its increasing rate and to adopt safety measures to reduce this rate.

POPULATION AND METHODS:

This descriptive observational study was conducted in Obstetric department of SGRH from 1st January 2011 to 31st December 2013. Sir Ganga Ram Hospital is a tertiary care hospital entertaining 35,000 to 42,000 patients annually and a total of 1,14158 patients in the study period in the Gynae and Obstetrics department alone. It deals with admitted and referred patients. During this study period 56026 deliveries were conducted in Sir Ganga Ram Hospital. Out of 56026 deliveries 20170(36.0%) were caesarean sections and 63.99% (35856 vaginal deliveries).The demographic data of all patients undergoing Caesarean section in hospital was retrieved on a specially designed proforma, the indication of caesarean sections and fetomaternal outcome was recorded. Any complications; maternal and fetal were noted down. The results were analyzed using SPSS version 11.

RESULTS

Table 1: Type of caesarean delivery

Type of caesarean delivery	n	%age
Emergency caesarean sections	16,295	80.78
Elective caesarean sections	3,875	19.21

Emergency Caesarean Sections is 4x the Elective sections. Repeat Caesarean Section is the most common indication.

Table 2: Indication of caesarean section

Indication of caesarean section	%age
Failure of progress	5.7
Fetal distress	14.2
Hypertensive disorders	4.2
Repeat caesarean section	47.14
Breech presentation	12.85
Antepartum hemorrhage	4
Obstructed labour	.01
Postdate pregnancy	4

Table 3: Annual delivery rates

Year	Vaginal delivery	C-Section	Total
2011	13787(60.25%)	9493(39.8%)	23,280
2012	11689(52.27%)	10380(47%)	22,069
2013	10380(52.76%)	9297(47.2%)	19,677

The overall 3 year Caesarean Section rate is 36%.

DISCUSSION

The recent studies have shown increasing trend in Caesarean section delivery. World Health Organization recommendations about optimal rates of cesarean section and best outcomes for women and babies appear to occur with cesarean section rates of 5% - 10%.” Rates above 15% seem to do more harm than good^{4,5}.

Many countries have recognized high CSR as a major public health concern and are introducing measures to reduce it. Most mothers are healthy and capable of uncomplicated vaginal birth. Caesarean section is major surgery and increases the risk of many acute and long term adverse effects for mothers and neonates⁶.There are absolute indications of caesarean section^{2,3}.

China has been cited as having highest rates of Caesarean section in the world at 40 percent in 2008 followed by Australia 31 percent in2007, Canada 26% in 2005-6, UK 22% 2008, Ireland 2.1% 2009.

One of the reasons for the increase in CSR could be safe anesthesia and better healthcare facilities thus reducing the maternal mortality to 20/100,000 in 2000. However compared to vaginal birth the mortality rate is three times higher with Caesarean deliveries⁶. However, it is misleading to directly compare the mortality rates of vaginal and Caesarean deliveries. Women with severe medical conditions, or high risk pregnancies, often require Caesarean section which can distort the mortality figures.

Another factor increasing the CSR is liability pressure on healthcare system. According to one study more Caesarean sections about 66% are performed during the day than night. This reflects comfort level of healthcare providers as well as patients. It is better to know the number of beds

required to prevent inefficiencies. Also training of staff is done in the morning hours.

The third factor maternal request is also driving up the CSR as mothers are less prepared for vaginal birth than Caesarean section^{6,7}. Other researchers have found similar results¹⁰. Our society is becoming more tolerant towards surgical procedure Cesarean section is a major surgical procedure that increases the likelihood of many types of harm for mothers and babies in comparison with vaginal birth⁸. Short-term harms for mothers include increased risk of infection, surgical injury, hemorrhage, emergency hysterectomy, intense and longer-lasting pain, going back into the hospital and poor overall functioning. Perhaps due to the common surgical side effect of adhesion formation, caesarean mothers are more likely to have ongoing pelvic pain, to experience bowel blockage, to be injured during future surgery, and to have future infertility, ectopic pregnancy, placenta previa and placental abruption⁹.

Fourth cause could be the challenge of multiple births due to Artificial Reproductive Technology advancement.

The fifth cause is late marriage and conception with multiple medical problems of hypertension, maturity onset Diabetes mellitus, recurrent pregnancy loss increasing liability pressures on healthcare provider¹¹.

Induction of labour with undilated cervix may also increase the likelihood of Caesarean delivery. Continuous fetal heart rate monitoring and epidural anesthesia increase risk of Caesarean section due to fetal distress.

The CSR could be greatly lowered through providing midwifery model of antenatal intranatal and postnatal care, continuous support during labour, performing external cephalic version where possible and conducting breech deliveries where possible. All these measures can reduce the CSR.

In a recently published study, the Centers for Disease Control and Prevention showed that a 27 percent increase in severe maternal injuries in the United States between 1998 and 2005 was associated with higher rates of caesarean sections.

Babies born by caesarean section are more likely to have surgical cuts, respiratory distress, difficulty in starting breast feeding, childhood-onset diabetes, and asthma in childhood and beyond¹⁰. According to one study Caesarean section was found higher in upper social class but in our hospital higher rates were found in all classes.

A planned caesarean section is an especially efficient way for professionals to organize hospital work, and personal life. Average hospital charges are much greater for caesarean than vaginal birth, and may offer hospitals greater scope for profit. All of

these factors contribute to a current CSR of over 36%, despite evidence that a rate of 5% to 10% would be optimal.

The World Health Organization officially withdrew its previous recommendations of a 15 percent Caesarean section rates in June 2010. Their official statement read. There is no empirical evidence for an optimum percentage .What matters most is that all women who need caesarean section receive them^{1,2}.

CONCLUSION

The overall rate of cesarean section in our study was 36%, with an annual range is 40-47% which is high, may be because SGRH is a tertiary care hospital and mostly referred cases are received. Private hospitals across the country are performing caesarean section at higher rates than Government hospitals. The Commonest indication of Caesarean section observed in this study was repeat/previous Caesarean section. Majority of patient's who underwent caesarean section were unbooked. The present study pointed out that CSR reduction cannot be achieved in short term unless mind of healthcare providers to train their juniors and separate economy from good practice.

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