

## ORIGINAL ARTICLE

## RATE AND INDICATIONS OF ELECTIVE AND EMERGENCY CAESAREAN SECTION; A STUDY IN A TERTIARY CARE HOSPITAL OF PESHAWAR

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**Background:** The study was conducted to determine the rate and clinical indications for emergency and elective caesarean section. **Methods:** This was a cross-sectional descriptive study conducted from December 2010 to January 2011 in Gynaecology unit-A of Lady Reading Hospital Peshawar. Consecutive patients who gave birth in the hospital during the study period were included in the study. There were a total of 966 patients. Mode of delivery and basic demographics of the patients who underwent elective and emergency caesarean section were noted down. Clinical indications were recorded. **Results:** Out of 966 patients, 210 underwent caesarean section. Therefore, the rate of caesarean section was 21.7 per 100. Among those 78% (n=164) were emergency caesarean sections and others were elective caesarean sections. Top six indicators for caesarean sections were foetal distress 17.1 % (n=36), obstructive labour/failure to progress 16.1% (n=34), previous caesarean section 15.2% (n=32), breech presentation 9.5% (n=20), cephalopelvic disproportion 6.1% (n=13), failed induction 5.7% (n=12) and pregnancy induced hypertension (PIH) 5.7% (n=12). **Conclusion:** The rate of caesarean section was only slightly higher than recommended by the WHO. Most of caesarean sections were emergency caesarean sections.

**Keywords:** Caesarean section, rate, indications, Elective, Emergency

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### INTRODUCTION

The increasing global rates of caesarean section have been one of the most debated topics in maternity care. Caesarean section is a major surgical procedure and like every surgical procedure, carries a significant risk of morbidity and mortality. Guidelines must be established and implemented for Caesarean section and it should be performed in the presence of specific and clearly defined indications only.<sup>1</sup> Many obstetricians consider caesarean section to be quite simple, efficient, safe and psychologically well-tolerated procedure and far superior to secondary interventions such as vacuum delivery or emergency caesarean section but opposite school of thought also exists. Thus, caesarean section is a subject of professional controversy.<sup>2</sup> Controversy over the rate of caesarean section is also there. The relative benefits of higher or lower rates are also debatable. Today caesarean birth accounts for 15–25% of all the deliveries in developed countries, with maternal mortality of less than 1:10,000.<sup>3,4</sup>

WHO states no additional health benefit associated with caesarean section if its rate goes above 10–15%. Maternal wish has become a new indicator for caesarean section in the developed world, however in the developing world; it is rarely performed purely on maternal wish due to lack of knowledge and also lack of facilities. Although the caesarean section rates have increased over the last

decade, the major clinical indications have remained the same, namely foetal distress, failure to progress in labour/failed induction, previous caesarean section and breech presentation.

In Pakistan, the caesarean section rates are difficult to calculate as most of the births take place at homes. Only complicated cases or those having good access to health centres avail this facility. Therefore, much higher incidence of emergency caesarean section is seen as compared to elective caesarean section.<sup>5</sup>

This study was conducted to determine the frequency of caesarean section and to analyze the indications of it in our setup. The study will also help identify the factors needed to be addressed in order to decrease maternal mortality rate.

### MATERIAL AND METHODS

This cross-sectional descriptive study was conducted from December 2010 to January 2011 in Gynaecology Ward-A of Lady Reading Hospital, Peshawar with patients consecutively selected including all pregnant women booked in the antenatal clinic and unregistered patients admitted in early labour.

A total of 966 patients were delivered through different modes. The study also included all of emergency caesarean sections that were indicated during this time. Patients in whom caesarean section

was indicated, a detailed *pro forma* was completed, regarding the relevant information about maternal age, whether registered or unregistered patient, elective or emergency caesarean section. Elective caesareans were defined as those performed without emergencies and the decision was made before the onset of labour. Emergency caesareans were defined as those performed for maternal or foetal emergencies such as preeclampsia, foetal distress or arrested labour due to other causes.

Clinical indications were noted down for both elective and emergency caesarean sections. In case of multiple indications, the three most important indications were considered for data analysis. The period of gestation at the time of presentation, gravidity, parity and obstetric background was also noted. Patients with gravidity more than one but less than five were grouped as multigravida and those with gravidity of five or more were grouped under grand multigravida.

Data was analyzed on SPSS version 16.0. The caesarean delivery rate was calculated as the number of caesarean deliveries per 100 deliveries. The percentage for each, emergency and elective caesarean sections were calculated. Proportions of indication-specific caesarean deliveries were calculated as the number of indication-specific caesarean deliveries per 100 caesarean deliveries.

## RESULTS

In the study period, 966 deliveries took place. Out of 966, 210 were done through Caesarean section while the rest were vaginal deliveries. The caesarean section rate was 21.7 per 100 deliveries. Among them, 78% (164) were emergency caesarean sections while 22% (46) were elective caesarean sections. The maternal age for patients undergoing Caesarean section ranged from 16 years to 42 years; 27% were under the age of 20 years, 50% were aged 20–30 years, 20% were aged 30–40 years and 3% were more than 40 years old.

The gravidity and period of gestation at the time of surgery are given in table-1. The clinical indications for elective Caesarean section are given in table-2 while those for emergency caesarean section are given in table-3.

Top six indicators for caesarean sections were foetal distress 17.1% (n=36), obstructive labour/failure to progress 16.1 % (n=34), previous Caesarean section 15.2% (n=32), Breech presentation 9.5% (n=20), cephalo-pelvic disproportion 6.1 % (n=13), failed induction 5.7% (n=12) and pregnancy induced hypertension (PIH) 5.7% (n=12).

**Table-1: Patients by gravidity and period of gestation**

Gravidity	Emergency C-Section n=164 (%)	Elective C-Section n=46 (%)	Total n=210 (%)
Primigravida	59 (35.9%)	6 (13.0%)	65 (30.9%)
Multigravida	65 (39.6%)	22 (47.8%)	87 (41.4%)
Grand Multi Gravida	40 (24.3%)	18 (39.1%)	58 (27.6%)
<b>Period of gestation</b>			
34 or less Week	12 (7.3%)	6 (13.0%)	18 (8.5%)
35–38 Week	26 (15.8%)	10 (21.7%)	36 (17.1%)
39–42 Week	124 (75.6%)	28 (60.8%)	152 (72.3%)
More than 42 Week	2 (1.2%)	2 (5.0%)	4 (1.9%)

**Table-2: Indications for elective caesarean section (n=46)**

Indications for Elective Caesarean Section	n	%
Previous Caesarean Section(s)	16	34.0
Marked Oligohydromnios	6	13.0
Cephalo Pelvic Disproportion	6	13.0
Pregnancy Induced Hypertension	5	10.8
Breech Presentation	4	8.6
Twins with some complication	4	8.6
Bad Obstetrical History	4	8.6
Maternal Wish (with bilateral tubal ligation)	2	4.3
Placenta Praevia	2	4.3
Miscellaneous	3	6.5

**Table-3: Indications for emergency caesarean section (n=164)**

Indications for Emergency Caesarean Section	n	%
Foetal Distress	36	21.9
Obstructed Labour/Failure to progress	34	20.7
Previous caesarean section(s)	16	9.7
Breech presentation	16	9.7
Failed Induction	12	7.3
Antepartum Haemorrhage	11	6.7
Primary Dysfunctional Labour	10	6.4
Transverse lie	9	5.5
Cephalo Pelvic Disproportion	7	4.3
Pregnancy Induced Hypertension/eclampsia	7	4.3
Cord Prolapse	4	2.4
Twin and first breech	4	2.4
Miscellaneous	9	5.5

## DISCUSSIONS

During the study period, the frequency of caesarean section was 21.7%. According to the WHO, the recommended rate of caesarean section should be within 10–15%,<sup>6</sup> thus this study showed a higher rate. However, being a tertiary care hospital, Lady Reading hospital receives most of the complicated cases, as indicated by greater percentage of emergency caesarean sections. Therefore, the actual rate of caesarean section for the area the hospitals serves is much lower. This is partly due to lack of facilities and also due to lack of knowledge or antenatal care. This is in contrast to studies in developed countries and countries with better health facilities.<sup>7–9</sup> In June 2010, WHO stated that there is no empirical evidence for the rate it recommends, as it has been a debatable issue. Now the WHO

recommends that caesarean section should be done only when it is needed.<sup>10</sup>

Primigravida are at higher risks, therefore, a higher incidence of caesarean section is found among them.<sup>11</sup> However in our study, caesarean section rate was high among multigravida (41.4%). This is probably due to fact that women in this part of the world get pregnant many times. This finding coincides with studies conducted in our setup.<sup>5,12,13</sup>

Foetal distress was the leading indication for caesarean section. Foetal distress is diagnosed on foetal heart monitoring and meconium. This is in part due to more advanced technology and equipment (such as ultrasound) newly available in some rural areas. Foetal distress has always been one of the most important medical indications for caesarean section.<sup>5,11,12,14</sup>

The second most frequent indication in this study was obstructed labour (16.1%); this is a common problem in Pakistan, primarily due to mishandling by traditional birth attendants, injudicious use of oxytocic drugs or unjustified induction with prostaglandins without prior assessment.<sup>15</sup>

Previous caesarean section is an important cause of caesarean sections; therefore implementation of a trial of vaginal delivery after previous one caesarean section should be done in order to control the increasing caesarean section rate.<sup>16,17</sup> A successful vaginal birth after a caesarean in the grand multiparous population has not been associated with a higher risk of maternal complications in comparison with repeated caesarean sections.<sup>18</sup>

About 9.5% of caesarean operations in this study were done because of breech presentation. Breech presentation is associated with higher maternal mortality and morbidly irrespective of route of delivery due to its association with foetal abnormalities and premature delivery. However, vaginal delivery for term breech does not increase morbidity and mortality, if the case for vaginal delivery is well selected. Nowadays there has been an increase in caesarean section for breech presentation, as most obstetricians consider it to be safer and easier than giving a trial of labour. This has led to increase in elective caesarean section for breech, as shown in this study.<sup>19</sup> Cephalopelvic disproportion was the sixth most common cause; however, for elective caesarean sections it was the second most common cause. High proportion of caesarean sections for cephalopelvic disproportion diagnosed before the onset of labour suggests a more aggressive approach, thus causing an increase in caesarean section rate.<sup>11</sup> Pregnancy induced hypertension was found in 5.7 % of caesareans in this study. Good antenatal care can

detect such problems earlier and early management can prevent the complications. Pregnancy induced hypertension carries a higher risk for caesarean section and preterm delivery.<sup>20</sup>

About 5.7 % of caesareans were due to failure of progression of labour. This was lower than what was found in other studies conducted in Pakistan.<sup>12</sup> It seems that the decision of caesarean section depends upon the department policy. The safety of caesarean section has encouraged the obstetricians towards caesarean section.<sup>21</sup>

Antepartum haemorrhage (APH) was an important indication for emergency caesarean section (6.7%). In APH, caesarean section is an important life saving procedure, as in most of the cases it is due to placenta praevia - a definitive risk for both child and mother if any delay is done.<sup>22,23</sup>

In this study all the caesarean section were performed with a definite medical indication. The women in our region do not accept caesarean section as a primary mode of delivery. Only two cases were reported out of 210 where the mother requested caesarean delivery, however, it was noted that a side procedure like bilateral tubal ligation was done in those cases and that this was the contributing reason for such a request. The situation is very different in developed countries where the women request elective caesarean section as a primary mode of delivery.<sup>24,25</sup>

There is currently no evidence that elective caesarean is safer than vaginal delivery. In fact, most evidence indicates that caesarean section has much higher risk than labour. Therefore, obstetric care providers should continue to advocate for vaginal delivery as the optimal mode of birth.<sup>26</sup>

## CONCLUSION

The rate of caesarean section was only slightly higher than recommended by the WHO. Most of them were emergency caesarean sections. This is primarily due to the reason that tertiary care hospitals usually receive complicated cases. In Pakistan most of caesarean sections are done with definitive clinical indication.

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