

## Prevalence and Indications of Caesarean Section in a Teaching Hospital.

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**Abstract:** Objective of the study was to assess the prevalence and different indications of caesarean section in a teaching hospital. It was descriptive cross sectional study carried out in Department of Obstetrics and Gynecology over one year period. Out of 1149 pregnancies, 246 caesarean sections were performed, while rest had normal vaginal deliveries. The prevalence of caesarean section in the study population was 21.40%. The most common indication of caesarean section was previous caesarean section (22.76%) followed by failed progress of labour (18.29%), fetal distress (15.44%) and breech presentation (14.25%) respectively. **Conclusion:** The rising prevalence of caesarean section was mainly due to previous caesarean section followed by failed progress. Certain measures have been recommended to curtail the increasing trend.

### INTRODUCTION

Pregnancy and delivery are considered as normal physiological phenomena in women. Approximately, 10% deliveries are considered as high risk, some of which may require caesarean section. The first modern caesarean section was performed by German gynecologist Ferdinand Adolf Keher in 1881. Caesarean section is normally performed when a vaginal delivery would put the mother and baby's life at risk but sometimes it is also performed on request. In recent years the rate has risen to a record level of 46% in China and 25% or above in many Asian and European countries, Latin America and USA<sup>1</sup>. Caesarean section is common surgical operation now and most estimated prevalence rate of 33%; prevalence ranges from 4% in Africa to 29% in Latin America and Caribbean<sup>2</sup>.

Increasing caesarean section rate is an issue of public health concern globally for last 30 years; its use has increased since 1970 to a level that is medically unjustified. Thus bringing negative, economic and health related repercussion<sup>3</sup>. Increased caesarean section rate in the developed countries is mainly due to fear of litigation, health insurance system, caesarean section by choice, increased use of electronic fetal cardiac monitoring and increased proportion of breech deliveries by caesarean section. In developing countries the reasons for increasing caesarean section rate are different. Poor socioeconomic conditions, low literacy level, lack of primary health care and low threshold of some doctors for caesarean section are the main reasons.

The steadily increasing global rate of caesarean section have become one of the most debated topics in maternity care as its prevalence has increased alarmingly in the last few years<sup>4,5</sup>. Caesarean section rate in USA is 29.1%, England 21.5%<sup>6,7</sup>. There is no consensus about what the ideal caesarean section rate should be, however World Health Organization states that no additional health benefits are associated with a caesarean section rate above 15%<sup>8</sup>. Leitch stated that indications for caesarean section should be the focus of study that leads to increased caesarean section rate<sup>9</sup>. Pakistan being a developing country has increased caesarean section rate. The aim of this study was to find the prevalence and different indications of caesarean section in the catchment areas of Sharif Medical & Dental College so that certain measures may be proposed to decrease the caesarean section rate. This study was conducted in Sharif Medical & Dental College Lahore in the department of Obstetrics and Gynecology from 1<sup>st</sup> November, 2010 to 30<sup>th</sup> October, 2011. This was a descriptive cross sectional study. The study included 1149 pregnant females after meeting the selection criteria.

**Inclusion criteria:** Age 20-45 years, booked patients for caesarean section, all women who were booked as well as emergency cases for trial of delivery.

**Exclusion criteria:** Gestational age < 28 weeks.

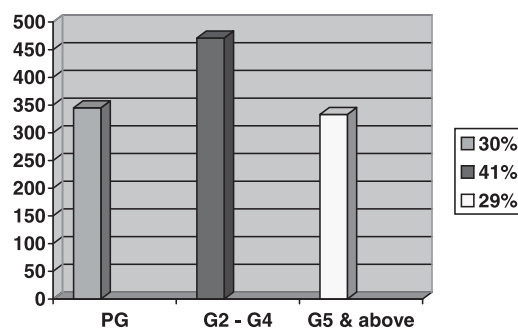
Detailed history and clinical examination was done on admission. Baseline

investigations were done including blood group and Rh factor, complete blood count, complete urine examination, random blood sugar level, hepatitis B and C screening. Specific investigations like ultrasound, doppler studies, biophysical profile or other serological tests were done when and where required. Each patient was managed by part-2 trainee supervised and assessed by consultant gynecologists. The labour room was equipped with cardiocotogram (CTG), epidural analgesia, ultrasound, ventuous, forceps, blood bank and emergency caesarean section facilities. Partogram was made in every case for progress of labour, continuous monitoring of fetal heart sound was done by CTG. Caesarean section was performed in those who failed for normal trial of delivery. All patients were analgesia in the form of systemic injections and epidural in selected cases.

Out of 1149 patients, 246 caesarean sections were performed, the data was analyzed. Chi square test was applied to find out the frequency of various causes of caesarean section. A p-value < 0.05 was considered as statistically significant. All the data obtained was critically analyzed and compared with the available local and international data and conclusions were made.

### RESULTS

A total of 1149 pregnant females were included in the study, 246 females underwent caesarean section. The caesarean section prevalence was 21.40%. Graph depicts that 30% of females were primigravida, 41% females were between G<sub>2</sub>-G<sub>4</sub> and 29% were G<sub>5</sub> or above.



Graph: Gravidity Wise Distribution of Patients n=246

Results showed that out of 246 caesarean sections, 95 caesarean sections (38.6%) were performed electively while 151 caesarean sections (61.35%) were performed on emergency basis.

As far as various indications of caesarean sections are concerned, previous caesarean section was the most frequent indication (22.76% p-value > 0.05). After that failed progress of labour (18.29% p-value > 0.05), fetal distress (15.44% p-value > 0.05) and breech presentation (14.25% p-value > 0.05) were the leading causes of caesarean sections (Table 1). Results showed clearly that majority of caesarean sections were performed on unbooked cases (67.07%) while 32.92% caesarean sections were done for booked cases.

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**Table 1: Main Indications Of Caesarean Section Total Patients =1149 Caesarean Section (N = 246)**

Indications of C/Section	No. of Patients	Percentage	p-value
Previous caesarean section	56	22.76%	(p-value > 0.05)
Failed progress of labour	45	18.29%	(p-value > 0.05)
Fetal distress	38	15.44%	(p-value > 0.05)
Breech presentation	35	14.25%	(p-value > 0.05)

## DISCUSSION

Primary caesarean section usually determines the future obstetric course of any woman and therefore should be avoided wherever possible. The caesarean section rate in our study was 21.40%. The rising caesarean section rate is a worldwide phenomenon although WHO states that there is no additional benefit associated with rising caesarean section rate of above 15%<sup>8</sup>. In England caesarean section rate was 9% in 1980 which was raised to 21.3% in 2000<sup>7,10</sup> Haidar G et al from Hyderabad Pakistan and Shamshad from Abotabad reported caesarean section rate as high as 67.7% and 45.1% in 2007 respectively<sup>11,12</sup>.

The most common indication in our study was repeat caesarean section (22.76%). Lubna Ali from Karachi Pakistan reported repeat caesarean section the commonest indication for caesarean section<sup>13</sup>, similar trends have been found in Northern Greece (30.9%) by Mersaovdi et al.<sup>14</sup> So the decision for primary caesarean section is important<sup>15,16</sup>, unless there is a clear, compelling and well supported justification for caesarean section, a carefully supervised justified trial of labour is necessary. Trial of scar in singleton pregnancies can be given to reduce the rate of repeated caesarean section as the risk of uterine rupture is low 0.3%<sup>17</sup>. Successful vaginal birth after caesarean (VBAC) in grand multiparous does not lead to increased maternal complication<sup>18</sup>.

The second most frequent indication observed in our study was failed progress 18.29%. This was mainly due to mishandling by Daies, injudicious use of oxytocin or unjustified induction of labour without prior assessment of risk factors, foetal size, position, presentation, stage of labour, and pelvic adequacy. A similar retrospective study, factor responsible of high caesarean section rate in Pakistan during study period 1985 – 1996 were mostly dystocia(6.32%), repeat caesarean section(5.8%), fetal distress(3.5%) and caesarean rate was 27.26% in primigravada and 24.1% in multipara<sup>23</sup>. Current research suggests that labour induction makes a caesarean section more likely among primigravidas if cervix is unfavourable<sup>19,20</sup>. Use of partogram helps in early diagnosis of abnormal labour patterns and timely management<sup>21</sup>, antenatal diagnosis of malpresentation and their effective management greatly prevents obstructed labour as well as failed progress.

The majority of caesarean section in this study were of unbooked cases (61.38%). This is mainly due to the paucity of general and obstetrical health care awareness in the catchments areas as well as devastating depriving socioeconomic conditions<sup>22</sup>. It is well documented that caesarean carries a much high maternal mortality and morbidity as compared to vaginal delivery even though caesarean section is being performed for indications such as fetal distress; perinatal mortality continues to be very

high among caesarean deliveries<sup>24</sup>.

The high caesarean section rate in our study was because of the fact that majority of the pregnant women of this surrounding population are delivered vaginally at home by traditional birth attendants (TBA) or lady health visitor (LHV) and general practitioners (GPs) in private hospitals, most of these patients are referred to this teaching hospital who have one or the other risk factors and who already had a trial of labour somewhere else. So the caesarean section rate was obviously high in these high risk and unbooked cases.

## CONCLUSION

The caesarean section prevalence in our study was 21.40%, because mostly referred cases after initial trial of daies, lady health visitors and general practitioners in private hospitals were received. Common indications of caesarean section observed in this study were previous caesarean section. Majority of patients who underwent caesarean section were unbooked.

*Measures recommended* to reduce caesarean section are as follows:

- Proper antenatal care and counseling regarding the planned hospital delivery.
- Proper diagnosis of labour.
- Partogram should be maintained for good monitoring of progress of labour especially in patients with previous one caesarean section.
- Good analgesia and proper fetal monitoring during labour.
- Avoiding undue inductions of labour.
- Trial of VBAC should be encouraged in appropriate cases.
- Expertise in external cephalic version and vaginal breech delivery in good selected cases.
- Proper training of traditional birth attendants and lady health visitors, effective working of referral chain and time demanded health policies.

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## LITERATURE REVIEW

### Outcomes with Split Liver Transplantation are Equivalent to those with whole Organ Transplantation.

Doyle MB, Maynard E, Lin Y, et al. Department of Surgery, Washington University School of Medicine, St Louis, USA. J Am Coll Surg. 2013 Jul;217(1):102-12

**BACKGROUND:** Split liver transplantation is an excellent option for expansion of the donor organ pool. However, reports of increased morbidity in split liver recipients may limit use of this technique. This was a single center retrospective analysis investigating split liver transplantation. Between August 1, 1995 and March 30, 2012, 53 of 1,261 (4.2%) recipients received split liver grafts. The 1-, 5-, and 10-year patient and graft survivals in adult recipients of split grafts were 95.5%, 89.5%, and 89.5%, respectively. Survival was similar to that of whole organ recipients (p=0.15). Twenty-three adults received split grafts: 18 (78%) were right trisegment grafts, 4 (17.4%) were right lobes, and 1 (4.3%) was a left lobe. The mean cold ischemic time was 5.7 hours (±2.4 hours [SD]) and warm ischemic time was 36 minutes (±5.5 minutes). Four (17%) recipients required hepatic artery reconstruction; 5 (21.7%) required a caval-venous patch, and 5 (21.7%) had Roux-en-Y reconstruction of the bile duct. No venous conduits were required. Thirty children received split grafts (median age 1.2 years, range 0.1 to 16.4 years) and had a median weight of 8.6 kg (range 3.6 to 45 kg). Pediatric split 1-, 5-, and 10-year overall and graft survival rates were 96.7%, 80.0%, 80.0%, and 93.3%, 76.8, and 76.8%, respectively. Complications included retransplantation in 3 (10.0%), bile leak in 5 (16.7%), hepatic arterial thrombosis in 2 (6.7%), bowel perforation in 2 (6.7%), and bleeding in 2 (6.7%). The mean donor age was 22.4 months (±8.9) months and body mass index was 22.8 kg/m(2) (±3.3 kg/m(2)).

**CONCLUSIONS:** Authors demonstrated excellent outcomes in adult and pediatric recipients using carefully selected donors for liver splitting. We recommend escalation of the use of split liver transplants to expand the donor pool for cadaveric liver transplantation.