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## Cesarean section rate and pattern of indications in a tertiary care maternity hospital in Kashmir: A cross-sectional analytical study

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#### Abstract

**Background:** WHO advises that lower segment cesarean section (LSCS) rates should not be more than 15%. A caesarean section (CS) is a life-saving surgical procedure when certain complications arise during pregnancy and labour. However, it is a major surgery and is associated with immediate maternal and peri-natal risks and may have implications for future pregnancies. Worldwide, CS rates increased up to 3 times in 14 years, from 6.7% in 1990 to 19.1% in 2014.

**Objectives:** To determine the rate of LSCS deliveries and pattern of indications for LSCS in a tertiary care maternity hospital in Kashmir.

**Methodology:** An observational study was carried out where in all the pregnant females who delivered in the month of December in a tertiary care hospital were enrolled in the study. The mode of delivery was ascertained and in case of LSCS, the primary indication for LSCS was noted down.

**Results:** In our study total number of deliveries were 1823 including 663 (36.36%) vaginal deliveries and 1160 (63.63%) LSCS. The commonest indication of LSCS was previous caesarean section in 37.2% followed by acute fetal distress (21.6%) and cephalo pelvic disproportion (CPD) 10.6%.

**Conclusion:** The LSCS rate in our study is very high compared to the WHO standards and previous LSCS is the commonest indication followed by AFD and CPD. It is an eye opener to health care policy makers and other stakeholders, to formulate the guidelines for the absolute indications of Caesarean section.

**Keywords:** LSCS, Maternity Hospital, Lala Ded Hospital

#### Introduction

A Cesarean Section is a surgical procedure in which incision is made through a woman's abdomen and uterus to deliver her baby. WHO advises that lower segment cesarean section (LSCS), which is the preferred and commonly used technique for cesarean section, rates should not be more than 15%<sup>[1]</sup>. Rate of caesarean section (CS) is expressed as a percentage calculated by dividing the number of caesarean deliveries over the total number of live births. A caesarean section (CS) is a life-saving surgical procedure when certain complications arise during pregnancy and labour. However, it is a major surgery and is associated with immediate maternal and peri-natal risks and may have implications for future pregnancies<sup>[2]</sup>.

The average global rate of Cesarean Section was 19.1% in 2014. The lowest rates of CS were found in Africa (7.3%) and more specifically in Western Africa (3%). The highest rates of CS were found in Latin America and the Caribbean (40.5%), and South America is the sub-region with the highest average CS rates in the world (42.9%)<sup>[3]</sup>.

Countries with the highest CS rates in each region are Brazil (55.6%) and Dominican Republic (56.4%) in Latin America and the Caribbean, Egypt (51.8%) in Africa, Iran and Turkey in Asia (47.9% and 47.5%, respectively), Italy (38.1%) in Europe, United States (32.8%) in Northern America, and New Zealand (33.4%).

Worldwide, CS rates increased up to 3 times in 14 years, from 6.7% in 1990 to 19.1% in 2014<sup>[3]</sup>.

The overall rate of caesarean section delivery in 2015–16 is around 17.2% in India. In 2005–2006 it was only 8.5% so it has doubled in ten years in India. However, the caesarean section rate is estimated to be low in rural areas (12.9%).

In recent times, the incidences of caesarean section are still on a rise in India [4].

**Objectives**

1. To determine the rate of LSCS in a tertiary care maternity hospital in Kashmir.
2. To determine the pattern of indications of LSCS in a tertiary care maternity hospital in Kashmir.

**Methodology**

An observational cross-sectional study was carried out at Lala Ded Hospital Srinagar, which is the only Maternity tertiary care hospital in the Kashmir Valley. The data for the study was taken from 1st December 2017 to 31st December 2017. All those pregnant females who delivered during this period at the Lala Ded Hospital were included in the study. The Pregnant females included those who were following the said hospital during Ante-natal period as well as those who were referred to this hospital from other hospitals and Health centres of Kashmir Valley. Intrauterine deaths (IUDS) were excluded from the study.

**Procedure**

An observational study was carried out where in all the pregnant females who delivered in the month of December were enrolled in the study. The mode of delivery was ascertained and in case of LSCS, the primary indication for LSCS was noted down.

The indication for LSCS was ascertained from the decision of concerned Consultant (written on the patient file). Only the first or primary indication was noted. Statistical analysis was done by using percentages.

**Results**

In our study total number of deliveries was 1823. Of these vaginal deliveries were 663 (36.4%) and LSCS were 1160 (63.6%).

**Table 1:** Distribution of deliveries according to type of delivery:

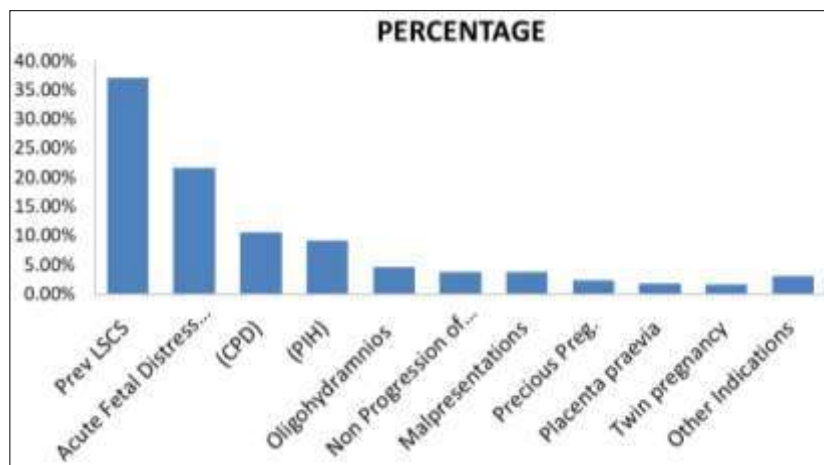
| Type of Delivery   | Number of Patients | Percentage |
|--------------------|--------------------|------------|
| Vaginal Deliveries | 663                | 36.4%      |
| LSCS               | 1160               | 63.6%      |
| Total              | 1823               | 100.0%     |



**Fig 1:** Pie chart showing distribution of deliveries according to type of delivery.

**Table 2:** Table showing data for LSCS deliveries

| Indication                           | Number | Percentage |
|--------------------------------------|--------|------------|
| Previous LSCS                        | 431    | 37.2 %     |
| Acute Fetal Distress (AFD)           | 251    | 21.6 %     |
| Cephalo-Pelvic Disproportion (CPD)   | 122    | 10.6 %     |
| Pregnancy Induced Hypertension (PIH) | 106    | 9.1 %      |
| Oligohydramnios                      | 56     | 4.8%       |
| Non Progression of Labour (NPOL)     | 45     | 3.9 %      |
| Mal-presentations                    | 45     | 3.9 %      |
| Precious Pregnancy                   | 27     | 2.3 %      |
| Placenta praevia                     | 21     | 1.8 %      |
| Twin pregnancy                       | 19     | 1.6 %      |
| Other Indications                    | 37     | 3.2 %      |
| Total                                | 1160   | 100.0%     |



**Fig 2:** Bar Chart Showing Indications of LSCS in the study population.

**Discussion**

Because of deficiency of health care facility at many places in Kashmir and deficient first referral units, high risk pregnancies are referred mainly to Lala Ded Hospital Srinagar a tertiary care hospital in Srinagar which is the department of Obstetrics and Gynecology of Government Medical College Srinagar.

LSCS rate in our study was 63.6% which is quite higher

than the WHO recommendations (<15%). Many other studies conducted so far have shown similar LSCS rates in Kashmir [5]. LSCS rate in our study is high because a significant proportion of high risk pregnant females are referred from nearby primary or secondary level hospitals to this tertiary care hospital.

In our study the maximum number of caesarean sections were done for those with a previous history of amounting to

as high as 37.2 %. This is quite expected because around half of pregnant females are having second pregnancy or beyond that. In our study the next common indication for LSCS was Acute Fetal Distress (21.6%). It included all pregnant women with decreased response to electronic fetal monitoring and non responsive cardio-topography (NRCTG) cases. Next common indication was Cephalo-Pelvic Disproportion or CPD (10.6%). A non engaged head with clinical pelvimetry before onset of labour was taken as CPD. Pregnancy Induced Hypertension or PIH as an indication of LSCS was seen in 9.1% of cases. It included all types of HTN during pregnancy. Vaginal delivery is generally desirable but because of high risk - prematurity or fetal compromise, caesarean section is preferred.

### **Conclusion**

The LSCS rate in our study is very high compared to the WHO standards and previous LSCS is the commonest indication followed by AFD and CPD. It is an eye opener to health care policy makers and other stakeholders, to formulate the guidelines for the absolute indications of Caesarean section. There is need for improvement of services to pregnant females so that high risk pregnancy are properly diagnosed and managed for better outcome while as vaginal delivery is encouraged in low risk cases.

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