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# PREVALENCE OF CAESAREAN SECTION IN KERALA, INDIA

Obstetrics & Gynaecology

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## ABSTRACT

A retrograde study of 800 women who had undergone Caesarean section in Karuna Medical College hospital in Kerala was done in order to analyze the various aspects of prevalence, surveillance and evaluation in relation to the surgery done. The Caesarean section rate nowadays is on crescendo due to institutional deliveries, middle socioeconomic status, and higher education. The following variables age, socio-economic status, educational status, BMI, parity, co morbidities, clinical findings and postoperative findings were noted. The incidence of Caesarean was at maximum in the age group of 25 to 35 years. Most of the Patients had repeat Caesarean section. In the repeat Caesarean section, indication was previous LSCS. The second most indication was fetal distress. The analysis showed the age of the mother plays a major role. The increase in the incidence of Caesarean section is due to complications in pregnancy. Study brings out the associated factors like age parity the number of ultrasonography and educational status which influence the rate in the incidence of caesarean section.

## KEYWORDS

Prevalence, Repeat Caesarean, Educational Status.

## 1. INTRODUCTION

Caesarean section in Indian population is around 17.2%. There is always a difference in the private sector and public sector in urban areas in Kerala. As per Robson classification the rate differs. FOGSI recommends the setting of ten group of Robson classification as per WHO guidelines in analyzing the prevalence of caesarean section. The prevalence and associated factors for increase in incidence of caesarean section among women in Kerala are studied. The percentages for the different variables like age, parity, education, BMI, malpresentation, bleeding during pregnancy, repeat caesarean section, antenatal care, weight and apgar of the baby and co-morbidities like hypertension, diabetes mellitus are included.

## 2. AIMS AND OBJECTIVES

Aim: An attempt to study the prevalence and the indication for caesarean section in the population in the Kerala.

## METHODOLOGY

Study setting site was limited to Karuna Medical College Hospital in Kerala where in the maternal and health services are provided. The data analysis of 800 patients between 2019 April to Feb was done. The proportion and percentage were computed and analyzed. Study design a descriptive design is a retrospective study.

The sample of the study: easy convenient sampling of 800 pregnant women who underwent caesarean section. Inclusion criteria were all women attending antenatal clinic who had caesarean section. Exclusion criteria were all women who had normal vaginal delivery and all those women who were delivered by forceps and ventouse delivery.

An informed consent was taken when these patients are admitted for delivery and a detailed general physical examination, obstetrical examination, investigations and a detailed medical examination is done when co- morbidities are present.

All statistical analysis was carried out using SPSS version. P value < 0.05 was taken as significant. The data includes age, socio economic status, education status, parity, BMI, co morbidities and clinical findings, investigations including hemoglobin, USG findings and postoperative findings

**Analysis:**

Statistical analysis chi-square tests are used to access comparison with p-value significance level as 0.05. The results are tabulated. The table (1) depicts the age, socio economic status(Figure 1), educational level(Figure 2) and obstetric score(Table 2, Figure 3) are shown in study population. The graduate patients were 92% (Figure 2). The leftover 8% finished high school. The patients 24% were from upper Class. 61% were from middle class. 15% were from lower class (Figure 1).

**Table 1**

| Age | SES | | | | Chi-square | p-value |
|---|---|---|---|---|---|---|
| | Upper | Lower | Middle | Total | | |
| Below 24 yrs | 38 | 219 | 99 | 356 | 41.166 | 0.00 P<0.05 significance |
| 25 to 35 yrs | 105 | 245 | 58 | 408 | | |
| Above 35 yrs | 5 | 24 | 7 | 36 | | |
| **Total** | 148 | 488 | 164 | 800 | | |

**Figure1**

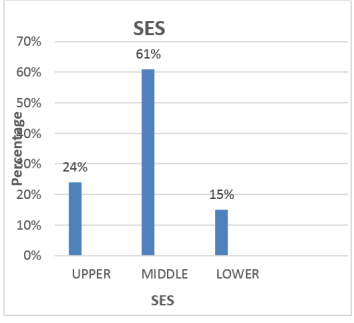



**Figure2**

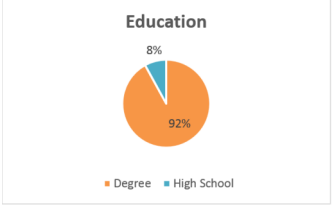



**Figure 3**

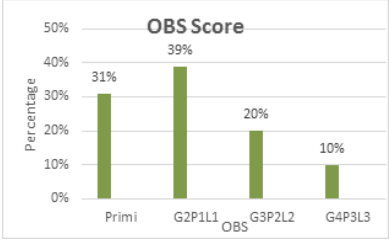
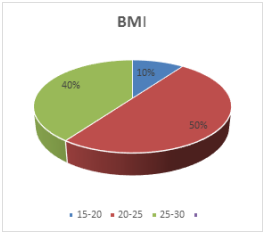


**Table 2**

| Age | OBSScore | | | | | Chi-square | p-value |
|---|---|---|---|---|---|---|---|
| | Primi | $G_2P_1L_1$ | $G_3P_2L_2$ | $G_4P_3L_3$ | Total | | |
| Below24 yrs | 135 | 143 | 30 | 48 | 356 | 74.573 | 0.00 P<0.05 Significance |
| 25to35 yrs | 88 | 137 | 128 | 55 | 408 | | |
| Above 35yrs | 13 | 16 | 2 | 5 | 36 | | |
| **Total** | 236 | 296 | 160 | 108 | 800 | | |

10% of patients had a BMI 15-20, 50% of patients had a BMI of 20-25 and 40% of patients had a BMI of 25-35(Figure 4).

**Figure 4**




We noted that more than 4 antenatal visits in 80% of patients, and 20% of patients had less than 3 ANC visits (Figure 5).

**Figure 5**

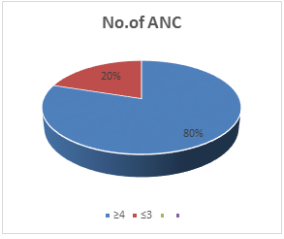
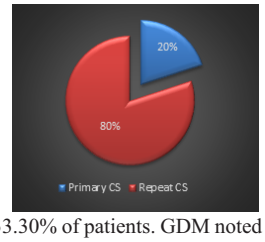



**Table 3**

| Types of CS | Indication | | | | | Chi-Square | p-value |
|---|---|---|---|---|---|---|---|
| | Prev LSCS | Fetal LSCS | Breech | Failure Of Induction | Total | | |
| Primary CS | 79 | 74 | 0 | 7 | 160 | 7.733 | 0.052 p>0.05 no significant |
| Repeat CS | 363 | 260 | 6 | 11 | 640 | | |
| **Total** | 442 | 334 | 6 | 18 | 800 | | |

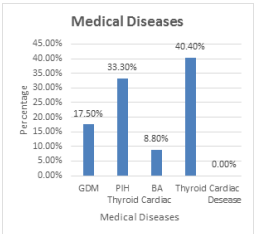
Primary Caesarian section was done in 20% while, repeat section 80% showed in the study population (Figure 6)

**Figure 6**



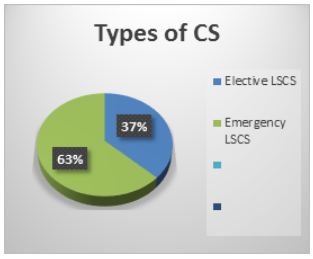

PIH was noted in 33.30% of patients. GDM noted in 17.50% patients. Bronchial asthma in 8.80% patients. Thyroid in 40.40% patients. Nil had Cardiac Issues (Figure 7).

**Figure 7**



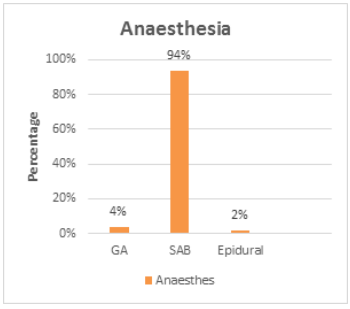

37% patients had Elective LSCS. 63% patients had Emergency LSCS (Figure8).

**Figure 8**



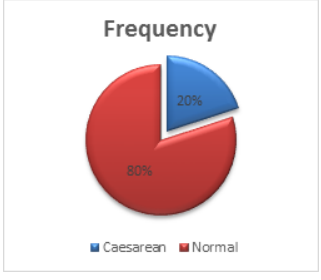

GA was given in 4% patient, spinal 94% while epidural only 2% (Figure 9). All the patients who had Caesarean section were lower segment Caesarean section. None had classical Caesarean section or Caesarean hysterectomy. It was noted 31% primi, G2P1L1-39%,G3P2L2-20% while G4P3L3-10%. The incidence of Caesarean section is 20% in our hospital (Figure 10).

**Figure 9**




**Frequency of Caesarean section**

**Figure 10**




Most of the patients who had repeat Caesarean section had sterilization done. All the cases had LSCS no classical Caesarean section was done none had Caesarean hysterectomy.

**Table 4 (Data shows intra-operative complications and duration of surgery)**

| Intra OP | Duration of Surgery | | | Chi-square | p-value |
|---|---|---|---|---|---|
| | 1-2hr | 2-3 hr | Total | | |
| Adhesion During Surgery | 4 | 1 | 5 | 4.090 | 0.251 p>0.05 no significance |
| Normal | 8 | 0 | 8 | | |
| Thinning | 166 | 34 | 200 | | |
| No Abnormal Findings | 514 | 73 | 587 | | |
| **Total** | 692 | 108 | 800 | | |

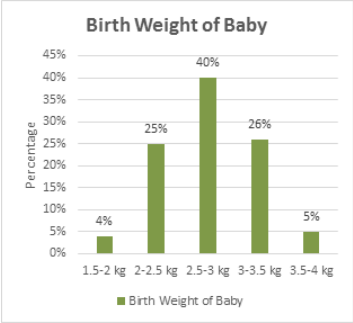
There were no major complications like burst abdomen or injury to bowel. Data of women with post operative complication in study. (Table.5)

**Table 5**

| Post OP | Hospital Stay | | | | Chi-square | p-value |
|---|---|---|---|---|---|---|
| | 3-5 | 5-7 | >7 | Total | | |
| SurgicalWound Gaping | 3 | 16 | 1 | 20 | 8.089 | 0.232 P>0.05 No Significance |
| Pain | 9 | 42 | 9 | 6 | | |
| Wound Infection | 2 | 10 | 0 | 12 | | |
| No Fever | 62 | 580 | 66 | 708 | | |
| **Total** | 76 | 648 | 76 | 800 | | |

The figure 11 provide the data regarding the birth weight of the baby delivered by Caesarean section 1.5-2 kg the incidence of 4% and 3.5-4 kg noted 5% majority of the weight between 2.5-3 kg ie.40%.

**Figure 11**




Most of the babies born had APGAR score 9/10.

**Details of the new born baby caesaraen section .**
**Table 6**

| APGAR | NICU | | | | Chi-square | p-value |
|---|---|---|---|---|---|---|
| | Preterm | MAS | Normal HealthyBabies | Total | | |
| 9/10 | 8 | 33 | 559 | 600 | 6.696 | 0.350 P>0.05 no significance |
| 8/10 | 1 | 5 | 82 | 88 | | |
| 7/10 | 1 | 1 | 72 | 74 | | |
| 6/10 | 2 | 1 | 35 | 38 | | |
| **Total** | 12 | 40 | 748 | 800 | | |

## DISCUSSION:

The prevalence of CS in both public sector and private sector is found to be escalating. This is indeed a reflection of the orders issued by WHO in the interest of the women in labor order to decrease the maternal mortality and morbidity; CS should be offered. After the launch of the insurance and health schemes help the public to have institutional birth and decrease the home deliveries [1].

Although there is a false allegation goes on in the public that the rate of CS is higher due to non - medical factors like financial gain and convenience [2].It is noted in some educated girls from high socio economic group due to fear of pain opt for CS [3]. There are some insurance facilities and claims can be done hence there is an increase in CS rate [4]. The rate of CS is higher if the first delivery was CS. So repeat section is undertaken although once Caesarean, is not always a repeat Caesarean. The study shows as maternal age advances proportion of birth by Caesarean increases [5].

It is found among women with schooling and graduation showed higher incidence of Caesarean section (CS). The rate of CS increased in higher socio economic group. It is also noted that rate of CS was more in women who attend more than 4 antenatal check- up and ultrasound investigation frequently done. The women who had higher blood pressure the CS rate was higher than those who had normal blood pressure. Complicated delivery like obstructed labor, cervical dystocia, excessive bleeding had higher rate of CS.

The medico legal issues and incomplete awareness of the facts which the patient's relatives get through social media and internet may put the medical professional in dilemma. It is an utter failure on the part of the public which do not understand the importance of role played by the obstetrician in the care of the laboring mother. Each case has to be individualized. There should be ample time for the patient to discuss with her family [6].

The complications and the associated risk may lead to increase in the number of CS deliveries. It is the last and final decision which the obstetrician takes to save mother and the baby [7]. As far as the results show there is major role played by the variables like maternal age, birth order, current age, pregnancy associated with co-morbidities, educational status, and repeat Caesarean section in the increase in Caesarean section rate.

It has been noted that some patients come late in labor handled outside expecting vaginal delivery land up in institution finally ending up in Caesarean section. There is an increased rate of CS among working individuals, the educated graduates and higher socio economics group. On multivariate analysis higher education and women who had >3 antenatal check-up and USG investigations associated with higher rate. The rate of CS is in our present study is 20%. But there is higher rate mention in a study conducted by 3 major cities in Kerala. It is 34.4% [8]. The study by Ghosh S. shows similar trend of increase in Caesarean section among educated public [9]. Similar study results are reflected by chacham [10]. Whether it is an institutional delivery or private sector the majority of the cases are repeat Caesarean section [11]. The variables taken in the study had major influence on the increasing trend in Caesarean section. Similar results are shown in other studies done in Kerala [12].

## CONCLUSION

The CS is considered as the best and last resort to deliver the laboring women. There should be a better relationship between patient and doctor in decision making and disclosure of treatment. The women should not be deprived of the surgical care as Caesarean is a relatively safer method of delivery for the mother in complicated obstetric reasons, especially in the presence of fetal distress as shown by electronic monitoring [13]. Public is aware of this novel method. The rate is higher in urban parts when compared to rural parts where education is lacking. Most of the parts of Kerala, the people are well literate, and so has the highest rate of Caesarean sections in the country. The medico legal issues and the awareness of the facts by the patient relatives may be also a reason for placing the medical professional in dilemma. For each case the situation and the scenario may be different hence each case has to be individualized.

The heroic normal complicated deliveries like breech extraction, shoulder dystocia, rotation for occipito posterior position, external cephalic version and destructive operative procedures for congenital malformation for transverse lie will soon vanish. Now a days the Kielland forceps and instruments used for destructive operations in obstetrics are kept in the museum.

There should be an audit meeting, discussion with other senior obstetrician regarding decision making following protocols for different management maneuvers like shoulder dystocia drill, PIH, eclampsia drill should be practiced in the department. The interaction with other colleague both international and national level should be available CMES, CPD.

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