

## Factors Influencing Mode of Delivery in Primigravida: Outcomes and Challenges

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Conflict of interest: Nil

### Abstract:

**Background:** Caesarean deliveries are associated with increased maternal and neonatal morbidity and mortality when compared to spontaneous vaginal deliveries. Therefore, this study was conducted to analyse the factors influencing mode of delivery in primigravida to reduce caesarean section rates.

**Methods:** This is a retrospective observational study done at PMCH & RI for a period of 12 months. The data was collected through predesigned proforma by reviewing medical records and analysed using SPSS software.

**Results:** Out of 1101 deliveries during the study period 608 were primigravida in which 8 were excluded for multiple pregnancy. Out of 600 deliveries, 371 (61.83%) had vaginal delivery and 229 (38.16%) underwent caesarean section. Maternal age of 20-25 years, spontaneous onset / progress of labour, Fetal weight 2.5-3 kgs, clear liquor were the significant facilitating factors for normal vaginal delivery.

**Conclusion:** The prediction of mode of delivery depends on both obstetrics and fetal parameters. Proper counselling and pain management may encourage patient to choose vaginal delivery can significantly reduce caesarean section rates.

**Keywords:** Primigravida, Caesarean Section, Vaginal Delivery, Birth Weight.

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### Introduction

The caesarean section rates have been on increasing trend day by day over the past few years worldwide. Numerous factors contribute to rise in caesarean section rates. Advanced maternal age, increased birth weight, diabetes and hypertension are strongly associated with the mode of delivery in various studies. Induction of labour, delivering at day / night time and the use of analgesics influences the mode of delivery. [1]

Primigravida influences the overall statistics, affecting mode of delivery in subsequent pregnancies. Hence, mode of delivery in first pregnancy is of prime importance in determining future obstetric course. [2] Hence, identifying and addressing the factors contributing to Caesarean section among primigravida should be emphasized to reduce overall Caesarean section rates. [3] Hence, this study was conducted to analyse the

factors influencing mode of delivery in primigravida and associated factors with increasing Caesarean section rates.

### Methods

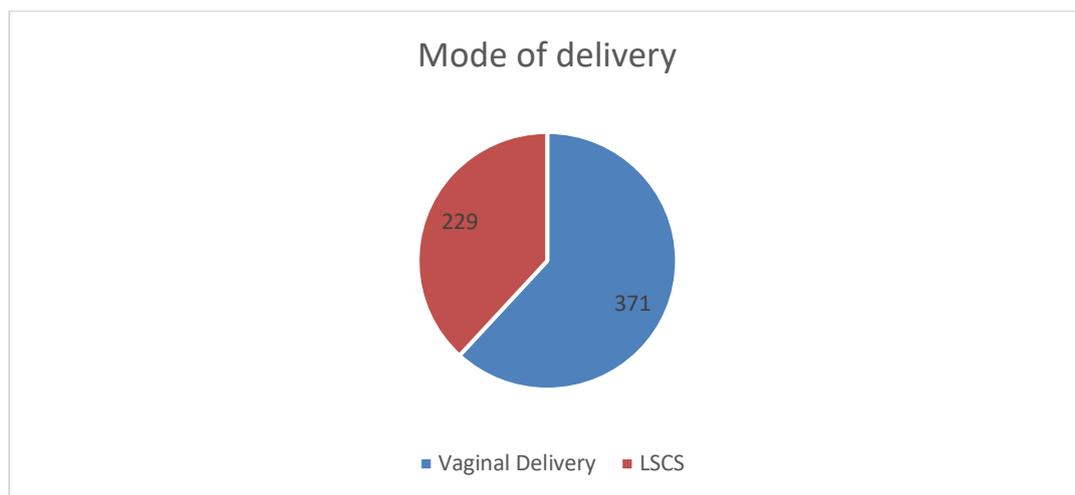
This is a retrospective observational study conducted in Panimalar Medical College Hospital & Research Institute during a period of 12 months from January 2022 to December 2022. All primigravida who delivered during the study period were included in the study. Only exclusion criteria are multiple pregnancies. The data was collected and categorized based on age of the patient, mode of onset of labour, mode of delivery, birth weight, colour of the liquor, fetal heart rate abnormalities, indications for caesarean section and neonatal complications through predesigned proforma by

reviewing medical records and analysed using SPSS software.

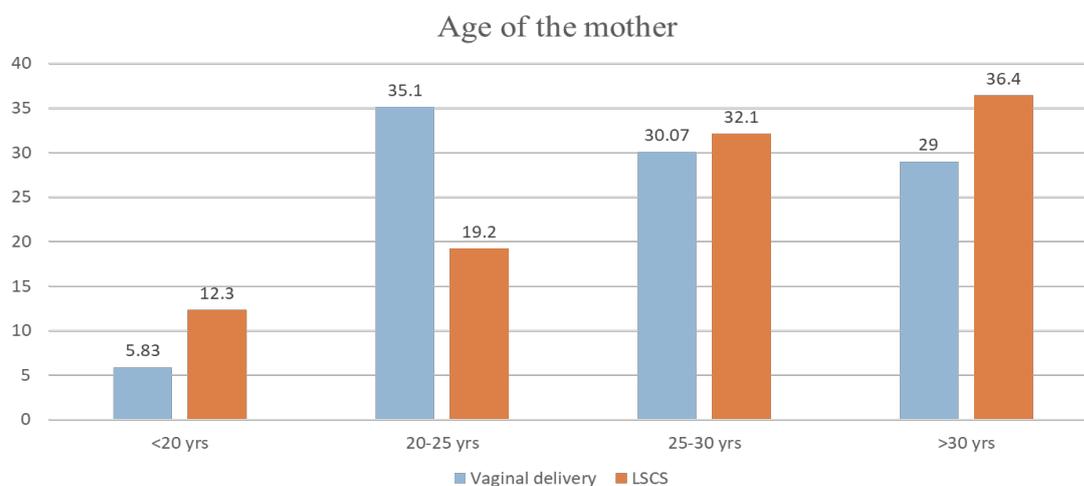
**Results**

A total of 1101 women delivered during the study period. Out of 1101 deliveries, 608 women were primigravida in which 8 were excluded due to multiple pregnancies. Out of 600 deliveries, 371 (61.83%) had vaginal delivery and 229 (38.16%) underwent caesarean section. Maternal age between

20-25 years had higher rate of vaginal delivery. 45.5% had spontaneous onset of labour and 54.5% were induced. Gestational diabetes, Hypertensive disorders of pregnancy and oligoamnios were the common indications for induction of labour. Caesarean section rates are high in induced labour when compared to spontaneous onset of labour. Caesarean section rates were high in hypertensive disorders of pregnancy and oligoamnios when compared to gestational diabetes.

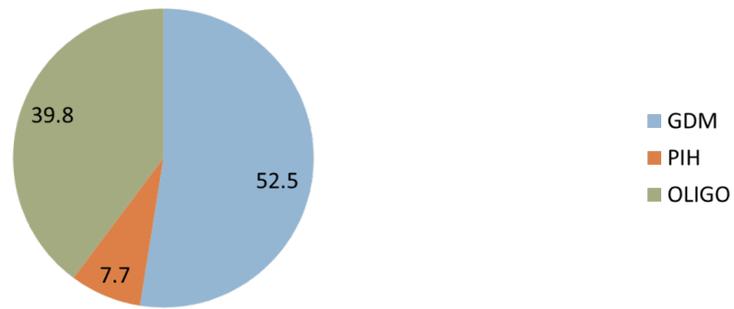


**Figure 1: Showing Mode of delivery in Primigravida**

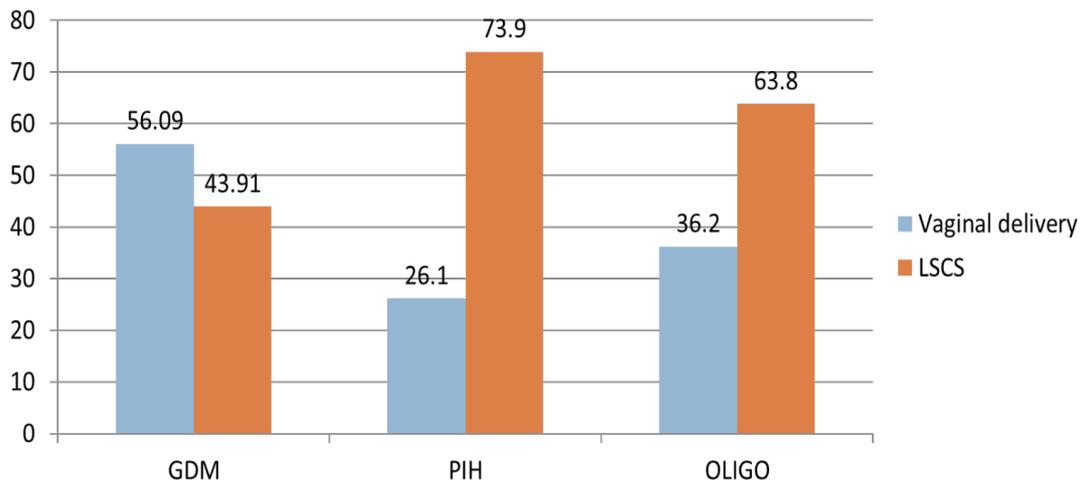


**Figure 2: Showing mode of delivery in relationship to age of the mother**

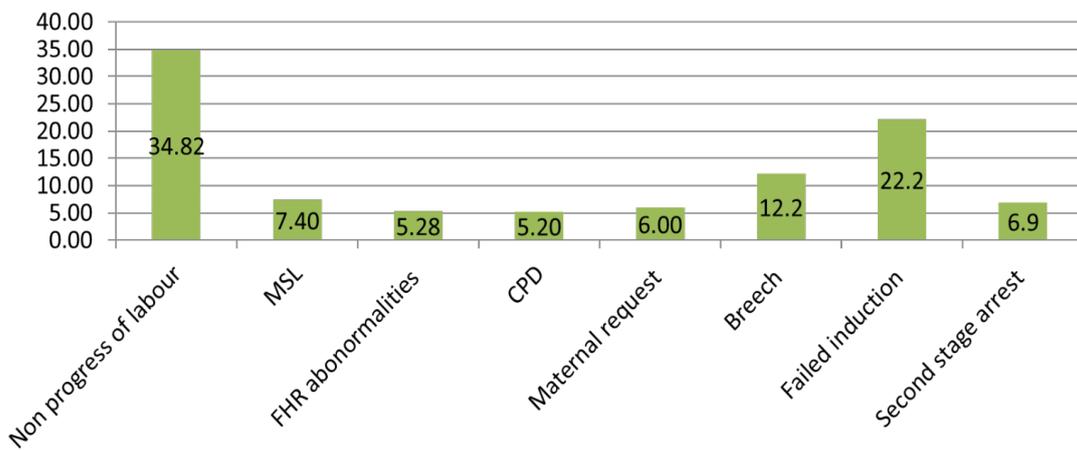
**INDICATION FOR IOL**



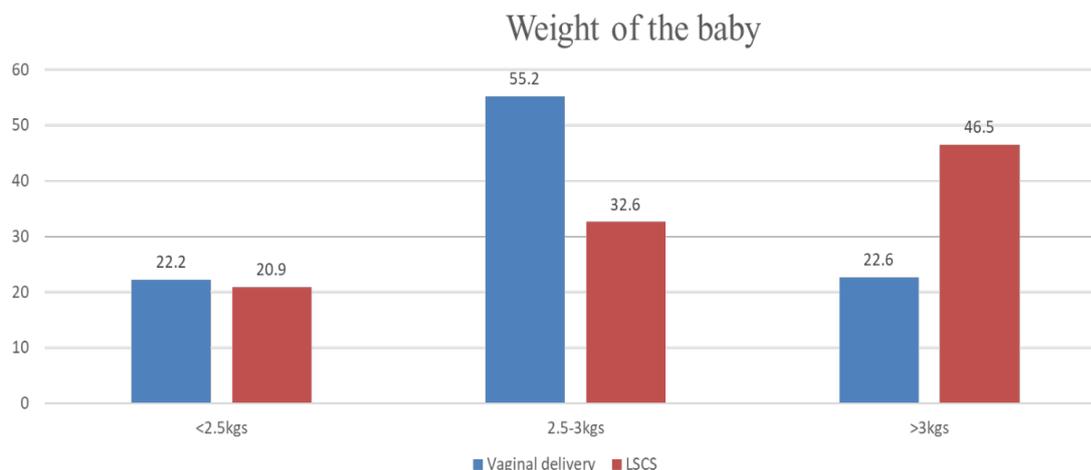
**Figure 3: Showing indications for induction of labour**



**Figure 4: showing mode of delivery in relationship to indications of induction of labour**



**Figure 5: Showing indications of Caesarean section**



**Figure 6: Showing Mode of delivery in relation to Birth weight**

### Discussion

Emergency Caesarean sections during labour are at increased risk for maternal morbidity, mortality and psychological trauma. Anticipating risks and outcomes when allowing for normal delivery can help in preventing unwanted outcomes and unnecessary emergency caesarean section rates. Hence, prediction of mode of delivery when in labour is a challenging task.

The present study showed that mode of delivery in primigravida is significantly influenced by induction of labour, maternal age, birth weight of baby and medical conditions. The likelihood of emergency Caesarean sections are more in induced labour as when compared to spontaneous labour, which is in comparison with similar studies. [1,4,5]

In our present study, high risk pregnancies were found to land up in emergency caesarean section may be due to the fact that high risk pregnancies were delivered either by induction of labour or by elective Caesarean section at term. This is in consistent with different other studies. [6,7]

Most of the primigravida with singleton pregnancies, delivering at term had more Caesarean sections rates during night. This may be due to less experienced junior residents who were involved in taking decisions at night where as senior obstetricians were involved during day time. [8]

Maternal age between 20-25 years was one of the facilitating variables for vaginal delivery in our current study, which is in comparison with similar other studies. [9,10] In our present study, Caesarean section rates are higher among hypertensive disorders of pregnancy mainly due to obstetric reasons. In contrast to this, few studies showed majority of the women had successful vaginal deliveries in hypertensive disorders of pregnancy. [11] This study showed no significant effect on mode of delivery in GDM is in similarity

with other studies. [12] But in contrast HAPO study found that GDM increases likelihood of Caesarean section rates. [13]

Increased birth weight is an independent risk factor for Caesarean section even in absence of GDM which is in consistent with other studies. [12,14] In our present study, significant facilitating factors for normal vaginal delivery were maternal age 20-25 years, spontaneous onset or spontaneous progress of labour, fetal weight 2.5-3 kgs, clear liquor and reassuring CTG. In our present study, non-progress of labour and failed induction were the most common indications of caesarean section. Other studies showed labour dystocia is a major cause for caesarean section. Various factors affecting dystocia includes malpresentations, occipito posterior position and Macrosomia. [15,16] In our current study four babies delivered vaginally had Erb's palsy due to shoulder dystocia. One baby had Hypoxic Ischemic Encephalopathy (HIE) delivered by LSCS in view of second stage arrest. Meconium stained babies and few babies had distress which were observed and given mother side within few hours of life. In our study neonatal morbidity is noted in both normal delivery babies and those delivered by emergency cesarean section. Hence care should be taken before planning the mode of delivery.

### Conclusion

The prediction of mode of delivery depends on various factors. Induction of labour, deliveries during night time, prolonged labour, increased birth weight, advanced maternal age were found to have significantly higher rates of Caesarean sections. Therefore, further research is required in addressing these factors to reduce Caesarean section rates. Proper counselling, pain management including epidural may encourage patients to choose vaginal delivery can significantly reduce caesarean section rates.

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