

**ORIGINAL RESEARCH**

# A Prospective study on determinants & indications of caesarean section at NMCH, Patna

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**ABSTRACT**

**Background:** The purpose is to study the indications of caesarean section done in the institution. The knowledge thus obtained would help us to suggest the measures which should be taken to decrease the rising trend of caesarean in our society. **Aims & objectives:** The study aims to explore the indications of caesarean section along with their socio-demographic and obstetric determinants to identify factors that are needed to be addressed in order to decrease the rising trend of caesarean section. **Materials & methods:** This is a cross-sectional study conducted at NMCH, Patna from September 2022 to August 2023. All patients who underwent caesarean section were included in this study and their indication for caesarean was studied. **Results:** 1510 women underwent caesarean from September 2022 to July 2023. Of this, majority of caesarean section indications included repeat C-section (30%), foetal distress (22%), referral from PHCs(18%), bad obstetrics history(3%), due to failed induction (7%) etc. **Conclusion:** Increase in caesarean section causes burden to the general health system & also on the family members. Hence, caution should be taken in decision making to perform caesarean section especially for primigravidas.

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**INTRODUCTION**

Caesarean delivery rates have increased worldwide during the last decades. It has become one of the most common surgical procedures performed worldwide. It was introduced in clinical practice as a life- saving procedure for both the mother & her baby. WHO mentions an optimal target range of caesarean rate to be 5%-15%, a rate above 15% implies an unnecessary and unjustified use of caesarean section where as rate below 5% implies population lack of access to medical technology. Maternal wish has nowadays become a new indicator for the caesarean section. Other factors attributed to the high & rising caesarean section rates include recent progress in social determinants of health, high socioeconomic status or women belonging to urban areas, increased referral to tertiary care centre from PHCs, use of newer technologies like CTG, USG, MRI to identify placenta previa, placenta accreta syndrome, abruptio etc. Caesarean sections are considered to be a life saving procedure but these are not without increased risks in terms of present or future pregnancies. Complications associated with caesarean section are increased chances of maternal morbidity & mortality, increased requirements of blood transfusion,

prolonged hospital stays, adherent placenta, postpartum haemorrhage, postpartum infections etc. Thus in the present scenario, real challenge is to have low caesarean section rate compared to vaginal delivery while preserving safety of mother & the newborn. For this, constant audits of caesarean performed in healthcare settings are necessary.

**AIMS AND OBJECTIVES**

The present study aims to explore the indications of caesarean section along with their socio-demographic and obstetric determinants to identify factors that are needed to be addressed in order to decrease the rising trend of caesarean section.

**MATERIALS AND METHODS**

This is a hospital based cross-sectional study conducted at Nalanda medical college & hospital, Patna from September 2022 to August 2023.

**INCLUSION CRITERIA**

All pregnant women who underwent caesarean section at NMCH, Patna and gave consent to participate in this study were included.

**EXCLUSION CRITERIA**

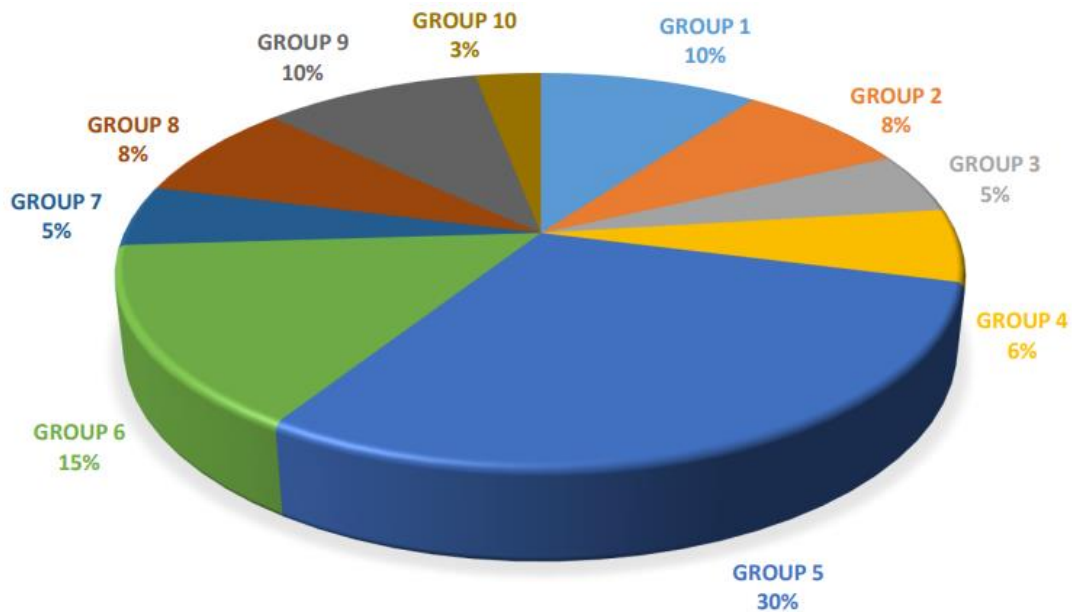
Women who did not give consent for participation were excluded from this study.

**Sample:** A total of 1860 caesarean section was conducted in the given time frame, of which, 1510 women agreed to participate in this study. Rest 350 of them did not give consent or could not be followed up regarding the same.

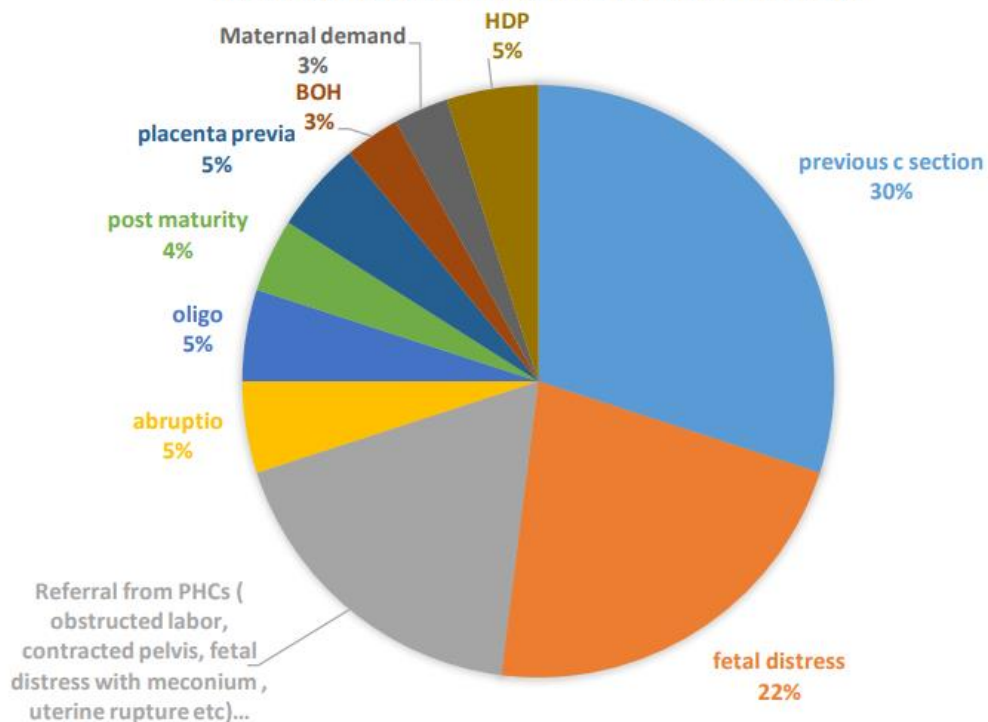
**Data Analysis:** Indications of caesarean section were

analysed based on Robsons 10 group classification system and caesarean section audit forms were analysed. It was further sub-divided into subclasses that included caesarean for singleton breech, malpresentation, multiple pregnancy, presumed fetal distress, IUGR, cord prolapse, placenta previa, post-datism, oligohydramnios, previous caesarean section, abruption, pre-eclampsia/eclampsia, failed induction, non progress of labor, obstructed labour, previous bad obstetrics history etc.

Groups	Descriptions
1	Nulliparous, single cephalic, $\geq 37$ weeks, in spontaneous labor
2	Nulliparous, single cephalic, $\geq 37$ weeks, induced or CS before labor
3	Multiparous (excluding previous CS), single cephalic, $\geq 37$ weeks, in spontaneous labor
4	Multiparous (excluding previous CS), single cephalic, $\geq 37$ weeks, induced or CS before labor
5	Previous CS, single cephalic, $\geq 37$ weeks
6	All nulliparous breeches
7	All multiparous breeches (including previous CS)
8	All multiple pregnancies (including previous CS)
9	All abnormal lies (including previous CS)
10	All single cephalic, $\leq 37$ weeks (including previous CS)



### INDICATIONS FOR CAESAREAN SECTION



### RESULTS

A total of 1510 women who underwent caesarean section were included in this study. Out of them, majority(77 %) were emergency caesarean sections and 23 % were elective. The most frequent indications for elective caesarean sections were previous history of C-section (30%), malpresentations (breech/transverse lie) (28%), maternal request (3%), placenta previa (5%) .

The main indications for emergency C- sections were fetal distress (22%) , referral from PHCs due to obstructed labour, previous C- section with scar tenderness, uterine rupture (10%). C-section due to

failed induction constituted 7% and that due to bad obstetrics history was 3%.

### DISCUSSION

Rate of caesarean sections at NMCH was 35% of all deliveries between September 2022 to August 2023. The rate being high due to NMCH being a tertiary care centre, it has increased referrals from PHCs and CHCs for obstructed labour, fetal distress etc. As per International healthcare community, ideal rate of caesarean sections is between 10%-15%. The most common indications of caesarean section identified in this study are previous caesarean followed

by fetal distress. As per ACOG, previous C-section should not be an indication for caesarean in absence of any obstetric emergencies. Thus, emphasis should be given on promoting VBAC. Fetal distress was identified as 2<sup>nd</sup> leading cause of Caesarean. Various medical interventions such as maternal left lateral position, moist oxygen inhalation, intravenous fluids, intra-cervical amniotic infusion should be promoted before opting for emergency C-section for fetal distress.

Active management of 2<sup>nd</sup> stage of labour by augmentation as well as instrumental delivery where indicated can effectively manage prolonged labour and thus decrease C-section rate.

### CONCLUSION

As repeat C-section is the dominant cause, reduction of primary caesarean rate should be given priority. Thus, intra-cervical amniotic infusion to reduce chances of meconium aspiration, augmentation of labour in timely manner, proper serial sonographic study to confirm the presence of oligohydramnios, inclusion of colour Doppler to diagnose IUGR, monitoring labour through partographs and promotion of instrumental delivery could be the most effective clinical interventions for reducing rate of primary caesarean.

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