

## Original Research

### Maternal morbidity associated with cesarean delivery without labor compared with spontaneous onset of labor at term

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#### ABSTRACT:

**Objective:** To estimate the maternal morbidity associated with cesarean deliveries performed at term without labor compared with morbidity associated with spontaneous labor. **Materials and methods:** The study was a retrospective descriptive analysis of all elective Caesarean deliveries and spontaneous deliveries conducted for women who received antenatal care (booked patients) at the obstetric unit of Teaching Hospital, for a period of one year. Information was considered from theatre records, labour ward registers and case files retrieved from the Medical Record Department of the hospital. **Results:** A total of 500 pregnancies, satisfied inclusion and exclusion criteria, of which 364 were caesarean deliveries without labor. There were no maternal deaths or transfers for intensive care. There was no difference in wound infection, blood transfusion, or intraoperative trauma. Women undergoing cesarean deliveries without labor were more likely to have puerperal febrile morbidity but were less likely to have early postpartum hemorrhage compared with women entering spontaneous labor. **Conclusion:** The increased maternal morbidity in elective cesarean delivery compared with spontaneous onset of labor is limited to puerperal febrile morbidity. Maternal morbidity is increased after assisted vaginal delivery and cesarean delivery in labor compared with cesarean delivery without labor.

**Keywords:** Caesarean delivery, spontaneous onset of labor, puerperal fever.

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#### INTRODUCTION

In the developed countries, Caesarean section is a widely embraced obstetric procedure and its indications have widened to include non-medical reasons in recent time.<sup>1</sup> The optimal rate of cesarean sections (CSs) with minimal risks to both the mother and the fetus is not known, An elective CS before the onset of labor may even be unfavorable to the child. Although many studies show that the risk of overall maternal complications is higher in cesarean than in vaginal delivery (VD), the CS rate has increased in all industrialized countries during last decades.<sup>2</sup> Safety for both the mother and infant with caesarean delivery without labor compared with spontaneous labor and planned vaginal delivery remains unresolved. We assessed the risks of maternal mortality and morbidity

in these two groups using data on a low-risk obstetric population.<sup>3</sup>

#### MATERIALS AND METHODS

The study was a retrospective descriptive analysis of all elective Caesarean deliveries and spontaneous deliveries conducted for women who received antenatal care (booked patients) at the obstetric unit of Teaching Hospital, for a period of one year. Information was considered from theatre records, labour ward registers and case files retrieved from the Medical Record Department of the hospital. Data were collected on maternal biosocial characteristics, maternal weight at delivery (or last antenatal visit), gestational age at delivery and birthweight. Pregnancies were included if there was a live born singleton at term (37–42 weeks) born to a nulliparous

woman. Pregnancies were excluded if there was a major foetal anomaly, if labour was induced, if there was nonvertex presentation with spontaneous labor, or if there was pre-existing maternal disease, fetal growth restriction (less than 10th percentile birth weight for gestational age), pregnancy complications such as gestational diabetes or pregnancy-induced hypertension, or premature rupture of membranes. Maternal morbidity outcome variables included venous thromboembolism need for blood transfusion, wound infection (infected abdominal or episiotomy wound), peripartum hysterectomy, puerperal febrile morbidity, evacuation of hematoma, early postpartum haemorrhage, third- or fourth-degree laceration, intraoperative trauma (including laceration of the uterine artery laceration of the bladder, bowel or

**Table 1:**

|  |      |      |
|--|------|------|
| Mean maternal age in y                   | 28   | 26   |
| Mean maternal weight at delivery in kg   | 78.5 | 68   |
| Mean gestational age at delivery in week | 38.3 | 39.3 |
| Mean birth weight in g                   | 3480 | 3440 |

Maternal morbidity outcomes comparing cesarean delivery without labor with onset of spontaneous labor are shown in Table 2. There were no maternal deaths, no maternal transfers for intensive care, and no maternal readmissions in either the study group. There were no cases of venous thromboembolism or hysterectomy in the cesarean delivery with no labor group. There were no differences in blood transfusions, wound infection, evacuation of

ureter; or severe extension of the uterine incision), need for postpartum readmission to hospital, and maternal mortality. Outcomes in the cesarean delivery without labor group were compared with women who presented in spontaneous labor and by their method of delivery, including spontaneous vaginal delivery, assisted vaginal delivery, and cesarean delivery in labour.

## RESULTS

A total of 500 pregnancies satisfied the inclusion and exclusion criteria, 364 of which were cesarean deliveries without labor. Cesarean deliveries without labor were performed for breech presentation (91%), fetal distress (2%), dystocia without labor (3.1%), malpresentation (1.1%), and others (2.8%).

hematoma, or intraoperative trauma. The laceration rate (third or fourth degree) was 5.4% in the spontaneous onset of labor group.

No difference was observed in total morbidity in the cesarean delivery without labor group compared with the spontaneous onset of labor group. There was a reduction in risk of total morbidity when cesarean delivery without labor was compared with assisted vaginal delivery and cesarean delivery in labor.

**Table 2:**

| Maternal morbidity          | Caesarean delivery without labor.<br>(n = 364) | Spontaneous onset of labor.<br>(n = 136) |
|-----------------------------|--|--|
| Blood transfusions          | 1  | 1  |
| Wound infection             | 5  | 3  |
| Puerperal febrile morbidity | 3  | 0  |
| Evacuation of hematoma      | 1  | 1  |
| Early PPH                   | 4  | 2  |
| Intraoperative trauma       | 1  | 0  |
| Total morbidity             | 15   | 7  |

## DISCUSSION

The maternal morbidity and mortality in a low-risk obstetric population at term by comparing outcomes in healthy nulliparous women who underwent a cesarean delivery with no labor with outcomes in healthy nulliparous women who entered labor spontaneously was studied. There were no maternal deaths noted in either group. Lydon Rochelle et al study reported no increase in risk of death among women delivered by cesarean compared with women delivered vaginally.

## CONCLUSION

The option of cesarean delivery by maternal request in the absence of complications in pregnancy remains controversial. This study of maternal morbidity and mortality in a low-risk, nulliparous, obstetric group demonstrates low rates of operative complications. Compared with spontaneous labor and planned vaginal

delivery, some infectious morbidities are increased in cesarean delivery without labor. However, maternal morbidity is increased the most after cesarean delivery in labor. The rate of emergency/urgent cesarean delivery in any group planning spontaneous labor and planned vaginal delivery will dictate how valid elective cesarean delivery might be for other selected populations, such as mature primiparous women or women facing induction of labor.

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