

APPROPRIATE GESTATIONAL AGE FOR ELECTIVE C-SECTION

LUBNA RIAZ DAR, SHAHERZAD SOHAIL AND SHAZIA RASUL
Department of Obs. & Gynae., Shalamar Hospital, Lahore

ABSTRACT

Introduction: Timing of elective caesarean delivery is a relevant public health issue. Neonatal outcome is associated with the duration of gestation at the time of delivery. Rate of C-section is increasing worldwide even in USA it increased from 20.7% in 1996 to 31.1% in 2006. The objective to determine the appropriate age of gestation for elective C-Section in order to have good neonatal outcome and decrease perinatal morbidity. It is a cross sectional study that is retrospective. It will be carried out in the Department of Obstetrics and Gynaecology, Shalamar Hospital, Lahore from March 2011 to Nov. 2011.

Methodology: One hundred consecutive subjects who had elective C-Sections during the study period were included in the study. Gestation of pregnancy was correlated with the outcome of babies. The newborns were assessed by 5 minutes apgar score and by admission in neonatal unit.

Results: In a total of 100 patients 9 had C-Section at 39 completed weeks and 47 had C-sections at 38 completed weeks and 44 had C-Sections at 37 completed weeks of gestation. Most of the babies who had respiratory problems and shifted to nursery were those who were delivered at 37 weeks gestation.

Conclusion: Timing of elective Caesarean delivery at term has a relationship and influence on neonatal outcome. The perinatal morbidity can be reduced by decreasing elective caesareans before 39 completed weeks of gestation.

Keywords: C-section, perinatal morbidity, age of gestation.

INTRODUCTION

Timing of elective caesarean delivery is a relevant public health issue. Neonatal outcome is associated with the duration of gestation at the time of delivery.¹ Rate of C-section is increasing worldwide even in USA it increased from 20.7% in 1996 to 31.1% in 2006.²

The elective caesarean delivery is usually performed at the time which is suitable for the obstetrician and the patient. Elective caesarean is usually performed at 37 weeks onwards as at this time fetus is considered to be fully mature. Now it has been found that 37 weeks neonate is more prone to respiratory problems than 39 weeks neonate.³ Thirty seven and 38 week gestation are often called term⁴ but the babies born before 39 weeks have increased risk of breathing problems, respiratory distress, and transient tachypnea of new born and neonatal admission in nursery.⁵ If caesarean section is delayed up to 39 weeks the risk of patient's going into labour and having emergency caesarean section began to rise. So the decision of time of caesarean section should be proper.

To explore association of gestational age at the time of C-section and neonatal outcome this study was conducted to define an appropriate gestational age at which elective caesarean section should be

performed to have good neonatal outcome and less perinatal complications.

METHODOLOGY

This study was conducted in a period of seven months in the department of Obstetrics and Gynaecology, Shalamar Hospital Lahore, from May 2011 to November 2011. The study included all the women who had elective caesarean deliveries during study period. An elective caesarean delivery was defined as a delivery performed at 37 weeks or after 37 weeks of gestation and was planned for a few days before the procedure. The study included women who had elective section at 37 weeks or later in the absence of labour and any other complicating factor that might influence the time of delivery. Women with multiple pregnancy and fetus with congenital anomaly were excluded and women with any medical problem which required early delivery were also excluded. Duration of pregnancy at the time of delivery was calculated both by menstrual dates and ultrasound scan dates and in case of disparity between dates were considered. The indication of caesarean section was also noticed and it was recorded whether it was first caesarean or repeat caesarean section. Neonatal outcome was recorded by apgar scores of neonate at the time of birth and 5 minutes

after birth. It was also noticed if the baby was shifted to mother or admitted to neonatal intensive care unit and the reason for admission, including requirement of oxygen therapy or ventilator support in nursery. The data was subjected to statistical analysis using SPSS version 10. Frequency and percentages were calculated for presenting the results.

RESULTS

A total of 100 patients who had C sections were included in the study. Among these 100 patients 44 (44%) had C-sections at 37 completed weeks. Forty seven (47%) had C-section at 38 weeks, and 9 (9%) had c-section at 39 weeks of gestation.

Among the babies delivered by C-sections at 37 weeks 7 babies (15.9%) were shifted to nursery. Out of the 47 babies delivered by C-section at 38 weeks 3 babies (6.3%) were shifted to nursery and none of the babies delivered at 39 weeks were shifted to nursery.

Breathing problems were seen in 5 babies (11.3%) and hypoglycaemia in 3 babies (6.8%) born at 37 weeks. Amongst the babies delivered at 38 weeks 2 neonates (4.2%) had respiratory problems and 2 (4.2%) had hypoglycaemia. None of the babies (0%) delivered at 39 weeks had respiratory problems and hypoglycaemia.

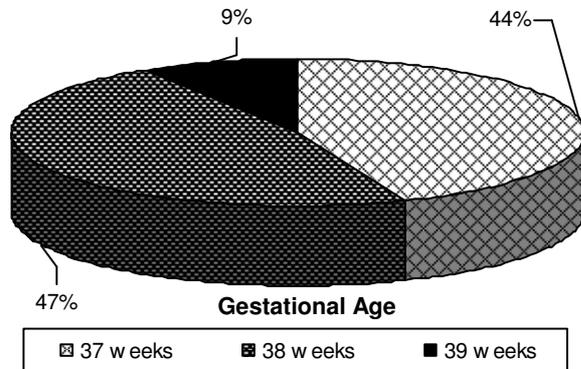


Fig. 1: Percentage of C-sections by Gestational Age.

DISCUSSION

Elective c-sections before 39 completed weeks of gestation are common. The large multicentric study in USA from 1994 to 2002 also showed that 1/3rd of elective repeat C-sections were performed before 39 weeks.⁶ In our study most of the elective sections were planned between 37 completed weeks and 38 weeks of gestation. Thirty seven and 38 weeks often called "term" but complication rates in neonates are higher than 39 weeks. Many studies have demonstrated that caesarean delivery before 39 weeks is associated with sub-optimal neonatal outcome.⁷ In our study we also found that C-section at 39 weeks

also have better neonatal outcome than babies born at 37 and 38 weeks.

In our study we found common neonatal problems are of breathing, transient tachypnea of newborn and hypoglycaemia. They are more common in babies delivered by C-section earlier than 39 weeks. Morrison et al (1995) reported the relative risk of respiratory morbidity is highest for C-section during 37 week and least during 39 week.⁸ Ti ta et al in their study demonstrated adverse respiratory problems, mechanical ventilation, sepsis, hypoglycaemia, neonatal admission are more for births at 37 weeks than at 38 weeks.⁶

Current study implies the benefits of delaying elective c-section until completion of 39 weeks gestation. Researchers at Aarhus University Hospital, Denmark also reported possibility of reducing neonatal respiratory morbidity associated with elective caesareans by delaying delivery until 39 weeks.⁹

The study in Academic Hospital Utrecht Netherland, also showed that elective sections should not be performed before the completion of a minimum 38 weeks of gestation.¹⁰

Since vast majority of women with previous C-section prefer delivery by elective repeat caesareans and there is increasing trends towards C-section on maternal request, the time of delivery and its effect on neonatal outcome is of public health concern.

Although the current study provides evidence regarding association between C-section at 37 weeks and increased risk of neonatal respiratory morbidity and implies benefits delaying elective C-section until the completion of 39 weeks of gestation we should carefully evaluate all the risks and benefits while deciding the timing of caesarean section. It should be carefully evaluated that delaying C-section may increase chances of emergency C-section. More over there are problems of arranging blood and doing sections on odd times which is sometimes difficult in our setup. In addition due to social problems because of unavailability of transport and emergency transfer service, proper staff, blood and medicines etc. Further studies are required to evaluate delaying elective C-section of previous repeat C-section and chances of scar dehiscence which is also a serious issue.

It is also recommended to conduct randomised control trials regarding the decision for appropriate timing of gestation for elective caesarean sections in our setup so that we have good neonatal and maternal outcomes.

It is *concluded* that the timing of elective repeat caesarean delivery at term has a relationship and influence on neonatal outcome. The perinatal morbidity can be reduced by postponing elective caesarean to 39 weeks of gestation. However at the same

time risks of delaying elective C-section have to be considered.

ACKNOWLEDGEMENTS

The pay our thanks to the administration of Shalamar Hospital for allowing us to work for this paper.

REFERENCES

1. Clark SL, Miller DD, Bel forte Ma, et al. Neonatal and maternal outcome associated with elective term delivery. *AJOG* 2009; 200 (2): 156.01-4.
2. Althebe F, Belizan JF. Caesarean section: The Paradox *The Lancet*. 2006; 368: 1472-3.
3. Farchi S, Dilallo, Poloa, et al, Timing of repeat elective caeseraen section delivery and neonatal respiratory outcome. *Archives of disease in childhood. Fetal and neonatal addition* 2010; 95 (1): 78.
4. Willmink FA, Hukkel hoven CW, Lunshof S, et al. Neonatal outcome following elective caesarean section beyond 7 weeks of gestation: a 7 years retrospective analysis of a national registry *American Journal of obstetrics and gynaecology* 2010; 202 (3): 250.1-8.
5. Oschiro BT, Henry E, Wilson J, Branch DW, Varner MW. Decreasing elective delivery before 39 weeks of gestation in an integrated health care system. *Obstetrics and Gynaecology*. 2009; 113 (4): 804-11.
6. Tita AT, Landon MB, Spongy CY et al. Timing of elective repeat caesarean section at term and neonatal outcome. *The New England Journal of medicine*. 2009; 360 (2): 111-120.
7. Basket Adverse Neonatal outcome: examining the risk between preterm, late preterm and term infant. *AJOG* 2008: 367-?
8. Morrisonjj, Renniejm, Milton PJ. Neonatal respiratory morbidity and mode of delivery at term –influence of timing of elective caesarean section. *BJOG* 1995; 102 (2): 101-106.
9. Graziosi GC, Bakker CM, Brouwers HA, Bruinse HW. Elective ceserean section is preferred after completion of minimum 38 weeks of gestation of pregnancy. *Ned Tijdschr Geneesk* 1998 Oct; 142 (42): 2300-2303.
10. Hamsen AK, Wisborg K, Wdbjerg N, et al. Risk of respiratory morbidity in term infants delivered by elective section: Cohort Study. *BMJ DEC*, 2007.
11. Fleischman AR, Oinuma M, Clark SL. Rethinking the definition of “term pregnancy”. *Obstetrics and Gynaecology*. 2010; 116 (1): 136-9.
12. HKikeby Elective section – 38 weeks, Too Soon. *BMJ Dec. 12* on line edition.
13. Cheng YW Perinatal outcome I low risk pregnancies, do they differ by weeks of gestation. *AJOG* 2008: 370-372.