

OUTCOME OF CHILDREN AT 1-2 YEARS AND MATERNAL MORBIDITY AFTER CESAREAN SECTION VS VAGINAL BIRTH FOR BREECH PRESENTATION AT OR NEAR TERM

Jyoti Ramesh Chandran, Uma Devi. N, D. Sumangala Devi

1. Additional Professor, Department of Obstetrics & Gynaecology, IMCH, Govt Medical College, Kozhikode, Kerala.
2. Professor & HOD, Department of Obstetrics & Gynaecology, IMCH, Govt Medical College, Kozhikode, Kerala.
3. Professor & HOD, Department of Obstetrics & Gynaecology, IMCH, Govt Medical College, Trichur, Kerala.

CORRESPONDING AUTHOR

Dr. Jyoti Ramesh Chandran,
Additional Prof Obst & Gynae,
Chandra Villa, Behind KSEB Chungam,
PO: West Hill,
Kozhikode, Kerala- 673005.
E-mail :drjyotichandran@gmail.com
Ph: 0091 9995353512

ABSTRACT: Back ground: In 2000 an international multicentric randomized control trial of planned vaginal delivery vs planned elective caesarean section for uncomplicated term breech presentation confirmed that perinatal mortality and serious neonatal morbidity were significantly lower in planned caesarean group. Secondary analysis of Term Breech Trial showed that prelabour caesarean and caesarean during early labour were associated with lowest adverse perinatal outcome due to labour or delivery and that vaginal delivery had the highest risk of adverse outcome **AIMS:** The purpose of this study is to determine the outcome of children at 1-2 years and maternal morbidity after caesarean section vs. vaginal birth for breech presentation at or near term. **SETTINGS AND DESIGN:** Prospective observational study from 1st January 2008-30th June 2009(18 months) at Institute of Maternal & Child Health , Govt. Medical College Kozhikode. **METHODS AND MATERIAL:** Outcome of 45 assisted breech deliveries during this period analyzed from case records. 90 Cesarean deliveries during the same period randomly selected as control. **STATISTICAL ANALYSIS USED:** Data analyzed using SPSS version 16.0. Chi square test was used to compare the outcome. A p value <0.05 was considered to indicate statistical significance. **RESULTS:** Vaginal delivery group- Five minute Apgar <7 (p=0.019), NICU admission (p=0.00001)(RR 4.71, 95% CI 2.33 to 9.91), Neonatal morbidity (p=0.012)RR 2.627,95% CI 1.216 to 5.678 ,Prolonged hospitalisation (p=0.005) RR = 2.962 ,95% CI 1.354 to 6.478 statistically significant in vaginal delivery group .Caesarean Section group-Elective 30(33.3%) Emergency 60(66.6%) Neonatal complication(p=0.03) RR=2.57 ,95% CI 1.06 to 6.2, NICU admission (p=0.013 RR=2.86 ,95% CI 1.21 to 6.76. were statistically significant in elective section group Maternal morbidity was not associated with type of CS p=0.2 RR = 1.39 ,95% CI 0.447 to 4.307. However the perinatal mortality was not significantly different in either group p=0.167 (RR 2.67,95%CI 0.62 to 11.41) **CONCLUSION:**There is an inherent risk of increased immediate neonatal morbidity with vaginal breech delivery. But at 1-2 year follow up the maternal and infant outcome is not significantly different in the two groups.

KEYWORDS: vaginal breech delivery

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INTRODUCTION: In 2000 an international multicentric randomized control trial of planned vaginal delivery vs planned elective caesarean section for uncomplicated term breech presentation confirmed that perinatal mortality and serious neonatal morbidity were significantly lower in planned caesarean group. Secondary analysis of Term Breech Trial showed that prelabour caesarean and caesarean during early labour were associated with lowest adverse perinatal outcome due to labour or delivery and that vaginal delivery had the highest risk of adverse outcome

SETTINGS AND DESIGN: This was a prospective study from 1st January 2008-30th June 2009 (18 months) at Institute of Maternal & Child Health, Govt. Medical College Kozhikode.

STATISTICAL ANALYSIS USED: Data analyzed using SPSS version 16.0. Chi square test was used to compare the outcome. A p value <0.05 was considered to indicate statistical significance.

METHODS AND MATERIAL: Outcome of 45 assisted breech deliveries during this period analyzed from case records and followed up for 1-2 years. 90 Cesarean deliveries during the same period randomly selected as control.

RESULTS AND ANALYSIS: The two groups were comparable in terms of maternal age, parity, gestational age and neonatal birth weight.

Table 1 shows that 62.2% of patients who underwent C-section and 64.4% delivered vaginally were in the age group between 19-25 years. 72.2% of primigravida underwent C-section and 62.2% delivered vaginally. 77.8% were at gestational age 37-40 weeks. Of those who underwent C-section for breech 33.3% were elective and 66.6 emergency. 88.8% of those who had C-section and 93.3% who delivered vaginally had babies weighing 1500-3500 gm. Babies with weight >3500 were delivered by C-section only (7.8%) 6.7% of babies with vaginal delivery had Apgar <7 at 5 minutes (p=0.019). 51.1% of babies delivered vaginally needed NICU admission (RR 4.71, 95% CI 2.33 to 9.91) (p=0.00001) as compared to 17.8% in C-section group. Neonatal morbidity was 35.5% in vaginal delivery as compared to 17.8% with C-section (p=0.012) RR 2.627, 95% CI 1.216 to 5.678. Prolonged hospitalisation was needed in 35.6% in vaginal delivery as compared to 15.6% in C-section group (p=0.005) RR = 2.962, 95% CI 1.354 to 6.478 Maternal morbidity in vaginal delivery group was 11.1% as against 7.8% in C-section group and it was statistically not significant (p=0.54 RR = 1.39, 95% CI 0.447 - 4.307). Neonatal morbidity comprised of perinatal asphyxia, seizures, DIC, hypoglycaemia, jaundice, meconium aspiration syndrome and respiratory distress. Immediate maternal morbidity consisted of wound infection, systemic infection, post-partum haemorrhage and postpartum depression. Delayed morbidity included irregular menstrual cycles and pelvic floor dysfunction.

Chart 2 shows that there were 30 (33.3%) elective C-section and 60 (66.6%) emergency C-sections. NICU admissions were more in elective C-section group (33.3%) as compared to emergency C-section (11.7%) and it was statistically significant (p=0.013) RR=2.86, 95% CI 1.21 to 6.76. Neonatal morbidity was significantly high (30%) in elective CS group as compared to emergency CS 11.7% (p=0.03) RR=2.57, 95% CI 1.06 to 6.23. However Maternal morbidity was not associated with type of CS p=0.25; RR = 1.39, 95% CI 0.447 to 4.307

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Table 2 shows the follow up of breech deliveries for 1-2 years. 93.3% of infants delivered by C-section and 91.1% of those who delivered vaginally had no morbidity at 1-2 years while 3.3% of infants in the C-section group had morbidity which comprised of recurrent respiratory tract infection and delayed milestones and underweight. Early neonatal mortality in C-section and vaginal delivery group was 3.3% and 8.8% respectively and the cause was perinatal asphyxia. The lone late neonatal mortality was due to Hypoxic ischaemic encephalopathy in C-section group. Infant mortality was 5.5% and 8.8% in C-section and vaginal delivery group respectively and cause was encephalopathy. There was no significant morbidity for mother in either group.

DISCUSSION: Vaginal breech birth can be associated with a higher risk of perinatal mortality and short-term neonatal morbidity than elective Caesarean section and our study corresponds with study by Hofmeyr M, Hannah M et al (2003)². However careful case selection and labour management in a modern obstetrical setting may achieve a level of safety similar to elective caesarean section. With careful case selection and labour management, perinatal mortality occurs in approximately 2 per 1000 births and serious short-term neonatal morbidity in approximately 2% of breech infants⁴. Many recent retrospective and prospective reports of vaginal breech delivery that follow specific protocols have noted excellent neonatal outcomes². Our series had a neonatal mortality rate of 8.8% Long-term neurological infant outcomes do not differ by planned mode of delivery even in the presence of serious short-term neonatal morbidity. Planned vaginal delivery of a term singleton breech fetus may be reasonable under hospital-specific protocol guidelines for both eligibility and labor management. Before a vaginal breech delivery is planned, women should be informed that the risk of perinatal or neonatal mortality or short-term serious neonatal morbidity may be higher than if a cesarean delivery is planned, and the patient's informed consent should be documented⁵

CONCLUSION: The probability that vaginal breech birth can be associated with a higher risk of perinatal mortality and short-term neonatal morbidity than elective Caesarean section should be kept in mind. However careful case selection and labour management in a modern obstetrical setting may achieve a level of safety similar to elective Caesarean section. Long-term neurological infant outcomes do not differ by planned mode of delivery even in the presence of serious short-term neonatal morbidity.

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TABLE -1

	Caesarean delivery n=90	Vaginal delivery n=45
MATERNAL AGE (Years)		
• 19-25	56 (62.2%)	29 (64.4%)
• 26-30	25 (27.7%)	14 (31.1)
• >30	9 (10%)	2 (4.4%)
PARITY		
• 0	65 (72.2%)	25 (62.2%)
• 1-2	25 (27.8%)	17 (37.8%)
GESTATIONAL AGE(WKS)		
• 36-37	16 (17.8%)	11 (24.4%)
• 37-40	70 (77.8%)	10 (66.7%)
• >40	4 (4.4%)	4 (8.9%)
CS DELIVERY		
• ELECTIVE	30 (33.3%)	45
• EMERGENCY	60 (66.6%)	
BIRTH WEIGHT		
• <1500	3 (3.3%)	3 (6.7%)
• 1500-3500	80 (88.9%)	42 (93.3%)
• >3500	7 (7.8%)	0

TABLE - 2

Follow up	C-section n=90	Vaginal n=45	RR	95%CI for RR	p value
1-2 years					
Infant Morbidity	86(93.3%)	41(91.1%)			
• No	3(3.3%)	0			
• Yes					
Neonatal Mortality	3((3.3%)	4(8.8%)		0.62-11.41	P=0.167
• Early	1(1.1%)	0			P=0.667
• Late			2.67		
			-		
Infant mortality	5(5.5%)	4(8.8%)	1.6	0.45-5.67	P=0.346

Cause was encephalopathy.

There was no significant morbidity for mother in either group.

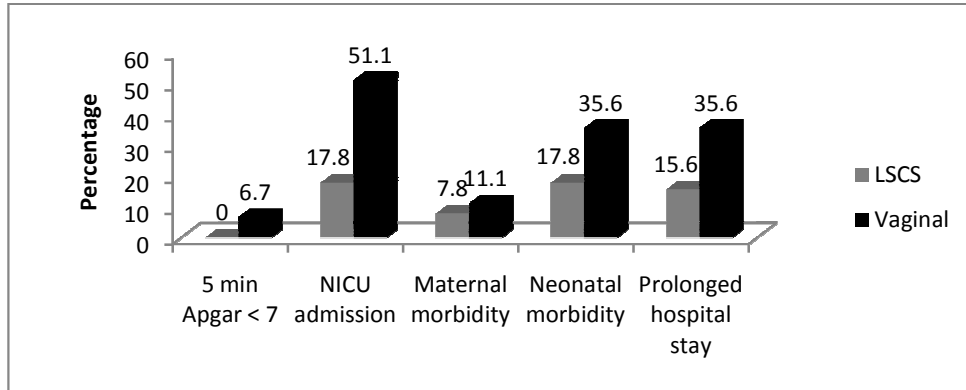


Chart 1: Perinatal outcome of babies following C-section and vaginal delivery for breech presentation

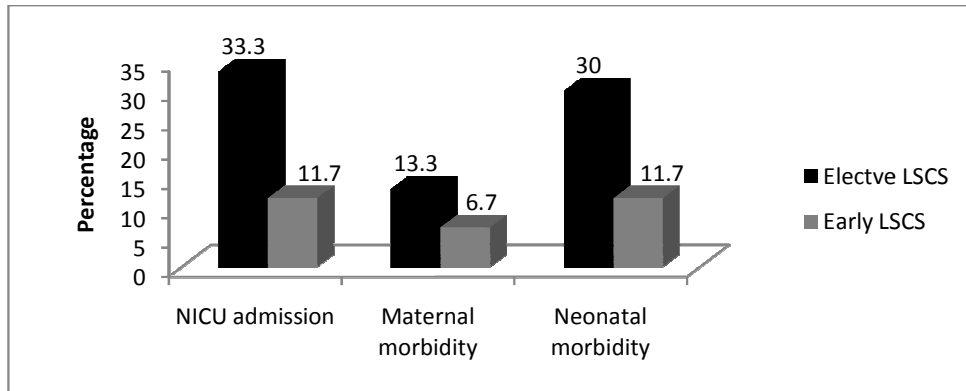


CHART 2