

# ROUTE OF DELIVERY AND PERINATAL RESULTS IN BREECH PRESENTATION BEFORE TERM

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## REZUMAT

**Objective:** Scopul lucrării este acela de a evalua rezultatele perinatale ale copiilor născuți prematur în prezentație pelviană, în funcție de calea de naștere. **Material și metode:** Un studiu observațional ce a inclus nașterile feților prematuri în prezentație pelviană, între 01.01.2000- 31.12.2007 la Clinica Obstetrică-Ginecologie Nr.1 Târgu-Mureș. Studiul a evaluat mortalitatea perinatală, comparativ pentru calea naturală de naștere, respectiv operație cezariană. Factorii demografici și clinici au fost separat evaluați. Metoda statistică utilizată pentru comparare a fost testul chi-pătrat și testul Fisher. **Rezultate:** Din totalul celor 2206 nașteri premature cu făt unic în perioada analizată s-au identificat 108 prezentații pelviene. Nașterea s-a produs prin operație cezariană în 65,7% din cazuri, respectiv pe cale vaginală în 34,2% din cazuri. Mortalitatea perinatală a fost de 14,8% pentru calea de naștere chirurgicală, respectiv de 18,9% pentru nașterea pe cale vaginală. Internarea în unitatea de Terapie Intensivă neonatală a fost de respectiv 26,7% pentru copiii prematuri născuți prin cezariană, respectiv 37,8% pentru cei născuți pe cale vaginală. **Concluzii:** Rezultatele perinatale modeste ale copiilor prematuri născuți în prezentație pelviană se datorează în primul rând altor factori decât prezentația pelviană. Creșterea continuă a ratei de operații cezariene nu se asociază cu rezultate perinatale superioare și merită serios re-evaluată.

**Cuvinte-cheie:** prematuritate, prezentație pelviană, operație cezariană

## ABSTRACT

**Objectives:** To evaluate the perinatal results of premature deliveries with fetuses in breech presentation at labor and to compare the results by route of delivery. **Study design:** Observational study of consecutive cases of singleton pregnancies with the fetus presenting in breech, before 36+6 gestational weeks at University Hospital Targu-Mures from 01.01.2000-31.12.2007. Crude perinatal mortality and the effect of mode of delivery – cesarean vs vaginal- by weight were compared. All clinically relevant factors were evaluated. Statistical methods included comparison of frequencies in the two groups by chi-square and Fisher exact tests and comparison of means by two-sample t tests. **Results:** Of 2206 singleton preterm deliveries 108 presented by the breech. The cesarean birth occurred in 65,7% (71 cases) while vaginal birth in 34,2% (37) from the total number. Perinatal mortality was 14,8% for cesarean route and 18,9% for the vaginal route, respectively. NICU admission was 26,7% for the cesarean section versus 37,8% for the vaginal birth. **Conclusions:** the poor perinatal outcomes in preterm breech are primarily related to factors other than breech presentation. The increased cesarean section rate for preterm breech does not influence neonatal outcome and must be reevaluated.

**Key Words:** preterm delivery, breech, cesarean section

## INTRODUCTION

The route of delivery for breech presentation have long been a topic of debate. The famous Term Breech Trial by Hannah et al, published in 2000 confirmed for many physicians that neonatal risks associated with term breech births are much higher among planned vaginal deliveries and implied that cesarean deliveries

should be systematically planned for all such women.<sup>1-3</sup>

However many authors have confirmed their observations that for the fetus weighing >2500 grams there is no difference in the perinatal mortality or morbidity between those delivered by cesarean section or vaginally.<sup>4</sup>

Furthermore, others have found no differences in neurologic development for the same weight group.<sup>4</sup>

Nevertheless, there are reports that assign a higher relative risk of death to those delivered vaginally and the general practice is still to deliver most breeches by cesarean section regardless of the estimated weight.<sup>5,6</sup>

However, the most optimal route of delivery for preterm neonates continues to be debated. Previous analyses have shown a lower mortality in cesarean births as compared with vaginal births in breech neonates with birth weights greater than 500 g.<sup>7-13</sup>

Other outcomes, such as neurologic sequelae and intraventricular hemorrhage, have also been found

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to benefit from cesarean delivery in breech preterm neonates.<sup>9-11, 14</sup>

For neonates in vertex presentation, some analyses have also demonstrated a benefit from cesarean delivery, with lower mortality, higher 1-minute Apgar scores, and less intraventricular hemorrhage.<sup>15-17</sup>

In contrast, other studies have shown no improvement in mortality and other outcomes in vertex neonates born by cesarean delivery.<sup>18-23</sup>

Despite the uncertainty in benefit for preterm vertex neonates, cesarean delivery has increased in this group.<sup>24</sup>

This contradiction between the results of the majority of published and the conduct of most clinicians prompted the evaluation of outcomes in our institution and an assessment of the benefits, if any, of cesarean section over vaginal delivery. This was possible because in our hospital presentation by the breech does not necessarily indicate, to all physicians, an abdominal delivery.

## **MATERIAL AND METHODS**

Observational study of consecutive cases of singleton pregnancies with the fetus presenting in breech, before 36+6 gestational weeks at University Hospital Targu-Mures from 01.01.2000-31.12.2007. The cases were collected prospectively and without exclusions. The maternal and neonatal files were reviewed to extract the relevant clinical information, which was entered into a computer file for analysis.

The route of delivery (either cesarean section or vaginal) was decided by the attending obstetrician managing the case.

For some of them breech presentation mandates abdominal delivery, whereas for others a trial of vaginal delivery is permissible and cesarean section is used to only for the usual obstetric and fetal indications (disproportion, fetal distress, maternal pathology, uterine scar, etc).

Crude and corrected perinatal results were calculated and compared between infants delivered vaginally and by cesarean section.

Perinatal mortality, Apgar scores, neonatal state, respiratory distress syndrome, intraventricular hemorrhage and neurologic damage were evaluated.

Other clinical factors were also analyzed, including parity, type of labour, anesthesia, intrapartum complications, age of gestation, birth weight.

When the modes of delivery were compared, a further correction was made by excluding cesarean for fetal distress.

Although this is not a randomised study,

the material collected prospectively provided an opportunity to compare the results of each way of delivery as practiced in this academic institution.

Statistical analysis was carried out with chi-square tests for discrete variables, Fisher exact test for rare outcomes or condition and two-sample t test for continuous variables. Correction was performed, excluding stillborns and malformations incompatible with life.

## **RESULTS**

Maternal age ranging from 13 to 40 years was not different between vaginal and abdominal deliveries.

Of 2206 singleton preterm deliveries 108 presented by the breech. The cesarean birth occurred in 65,7% (71 cases) while vaginal birth in 34,2% (37) from the total number. Overall and for each gestational age there were more neonates delivered by cesarean section than by vaginal route.

Perinatal mortality was 14.8% for cesarean route and 18.9% for the vaginal route, respectively. NICU admission was 26.7% for the cesarean section versus 37.8% for the vaginal birth.

Regarding immediate postpartum results, comparing cesarean section with vaginal birth we found that number of newborns with Apgar score 0 at birth was not-significant higher in the cesarean group (RR= 0,9859, 95% CI 0,9859 – 1,014). Apgar score 1-3 at 1 minute was statistically significant associated with cesarean route (RR= 1,124, 95% CI 0,833 – 1,284). Apgar score 4-7 at 1 minute, and Apgar score 8-10 at 1 minute were not statistically significant associated with vaginal delivery (RR = 0,7024, 95% CI 0,4577 – 1,012).

Regarding birth weight, newborns in the 700-1500 grams group and 2100-2500 grams were more likely to be born by cesarean section, while the 1600-2000 grams group was associated with the vaginal route.

Patients with previous uterine scar were statistically significant associated with cesarean section (p = 0,04, RR = 0,8873, 95% CI 0,8167 – 0,9640).

We found no difference in birth asphyxia and RDS between the two routes of delivery.

Regarding the neonatal mortality we found no statistically significant difference in 1- 5 days mortality, 6-10 days or 1-30 days, respectively.

## **COMMENT**

Among the 2206 singleton preterm deliveries 108 presented by the breech. This represent a lower incidence (4.89%)- uncorrected by gestational age- as we expected and reported in the literature by Hill<sup>25</sup> that

at 28 weeks there is a high (24%) prevalence of breech presentation, diminishing steadily to < 4% at term, same observations had been made before by others.<sup>26</sup>

Route of delivery: vaginal delivery of the breech presentation has been considered among important contributors to the very high perinatal mortality rate.<sup>27</sup>

Yet the majority of reports of the last years have been unable to demonstrate a lower neonatal mortality rate for cesarean deliveries or a lower neonatal morbidity rate.<sup>28,29</sup>

Since the publication of the Term Breech Trial the rate of cesarean delivery for singleton breech infants has increase in our institution, a rise also reported in France from 49,0% in 1998 to 75,0% in 2003, in the Netherlands, Australia and New Zealand.<sup>2,3,32,33</sup> but in our study, with the limitation of any observational study the data provide little or no evidence of benefit of cesarean section over vaginal deliveries, showing no effect of mode of delivery on neonatal outcome.

Under the standard practice conditions neonatal outcome was not significantly poorer among infants with vaginal than with cesarean deliveries.

In the literature, survey carried out among specialists suggest that the preference for cesarean section delivery may be a combination of intellectual, emotional, legally defensive conclusions rather than rational and scientific ones.<sup>30,31</sup>

In centers where vaginal breech delivery remains a quite widespread practice and complying with rigorous conditions before and during labor, we did not find a significant excess risk associated with vaginal delivery compared with routine cesarean for women with singleton fetus in breech presentation before term.

Our results confirms the well – known fact that breech presentation and delivery are associated with very high perinatal mortality and morbidity rates.<sup>4</sup>

However, the data shows that this is an association and not necessarily a cause - effect relationship. The poor neonatal results should more properly associated to antepartum complications, especially premature labor and its sequela of neonatal complications.<sup>4,34,35</sup>

Under the conditions discussed here, the delivery route for singleton breech preterm infants must be offered to women after providing them with clear, objective and complete information.<sup>3</sup>

## **CONCLUSIONS**

The poor perinatal outcomes in preterm breech are primarily related to factors other than breech presentation. The increased cesarean section rate for preterm breech does not influence neonatal outcome and must be reevaluated.

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