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Time Interval in Twin Delivery -The Second Twin Need Not Always Be Born Shortly after the First

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Key Words

Twin delivery
Acid base status
Clinical status

Abstract

In order to evaluate the influence of the time interval on the second twin in twin deliveries, we have used more precise criteria than have been used in the literature to date. The following parameters of the twins were analyzed: normal CTG of the second twin recorded continuously during labor and pH value of the umbilical artery blood after delivery as well as clinical state according to the modified Apgar score. We could not find a general influence of the time interval on pH and clinical status of the second twin. Our results indicate that in cases of uncomplicated twin delivery with a normal cardiotocogram there is no necessity for the second twin to be born as soon as possible after the birth of the first twin.

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Introduction

The problem of the influence of the time interval on the condition of the second twin has been discussed in the literature for many years. In order to evaluate the influence of the time interval on the second twin, we have used more precise criteria than those reported in the literature to date [1-5].

The following parameters of both twins were analyzed: the umbilical artery blood pH value and the clinical state according to the modified Apgar score [6].

The data were evaluated using the Statistical Package for Social Sciences (SPSS). The significance of the difference between the study groups was examined by the Mann-Whitney test.

Results

Materials and Methods

The material was analyzed retrospectively from January 1, 1971, to December 31, 1990. In these 20 years, 494 twin pregnancies were seen at the Department of Obstetrics, Women's Hospital, Berlin-Neukölln, FRG. Among these there were 59 twin deliveries which fulfilled the following criteria for inclusion in the study:

Both twins were born from a vertex presentation.

Both twins were delivered vaginally and spontaneously (without using vacuum extraction, spoons, forceps or Kristeller's maneuver).

Both twins were $\geq$ 10th centile of weight for gestational age.

The heart rate of the second twin monitored with CTG was normal.

Characteristics of the Study Population. The incidence of twins during the 20-year study period was 1 per 104 pregnancies (1%). Among our study group ($n = 59$), 18 mothers were primiparae, 22 were secundiparae and 19 were tertiparae and more. The patients were between 18 and 41 years old and the gestational ages were between 30 and 40 weeks. The mean birth weight of the first twin was $2,449 \pm 567$ g and that of the second $2,416 \pm 556$ g.

Twin 2 versus Twin 1. The pH values from umbilical artery blood from the second twin were significantly lower than those from the first twin (table 1).

The differences in modified Apgar score between second and first twin are not statistically significant.

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Table 1. Comparison of the pH from the umbilical artery blood and the modified Apgar score in twins, Berlin 1971-1990

Twin 1

Twin 2

Time Interval and ApH. No influence of the time interval on the Δ pH between first and second twins was observed (table 3).

pH

Apgar score

7.31 ± 0.04 8.9 ± 0.75

7.27: 8.5:

0.08 1.06

< 0.001

NS

Discussion

Table 2. pH values from umbilical artery and modified Apgar score of the second twin at different time intervals in cases of normal cardiotocogram

• twin 2

Table 3. Differences of the pH values in the umbilical artery blood between first and second twins at different time intervals

Time Interval and pH. No influence of the time interval on the pH value from the umbilical artery of the second twin was observed (table 2).

Time Interval and Apgar Score. Up to the 20th minute of the time interval there was no change in modified Apgar score of the second twin. Time interval longer than 20 min was connected with little decrease of Apgar score without clinical importance (table 2).

Many authors suggest that the birth of the second twin should happen as soon as possible after the birth of the first twin [1-5]. Unfortunately, many of these authors have made their study on unselected twins. One of the rare publications in which some criteria were used is that by Müller-Holve et al. [7]. These authors used the following criteria for both twins: vertex presentation,

vaginal deliveries and birth weight above 2,000 g. They found no correlation between clinical status score of the second twin and time interval. But comparison of the acidity state demonstrated that the actual pH values in the umbilical artery blood of second twins decreases statistically significantly with increasing time intervals. This finding opposes our results. The reason for these differences is that the above-mentioned authors included cases with suspicious cardiotocogram between the birth of the first and of the second twin and cases with instrumental delivery. In such cases, it is impossible to differentiate the influence of the time factor on the status of the second twin because there was an obvious necessity for earlier termination of labor in some cases because of fetal distress. Our results justified the following conclusion: in cases of uncomplicated twin delivery with normal cardiotocogram there is no necessity for the second twin to be born shortly after the first. This is a logical conclusion insofar as a normal CTG is safe proof that the fetus is in an undisturbed condition and there is no apparent reason why this would not be valid for the second twin. The general clinical advantage of this finding is that in such cases often overhasty or unnecessary operative manoeuvres, dangerous for the mother and fetus, may be avoided.

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