

# Evaluation on the Influence of the Timing of Twin Pregnancy Termination on the Outcome of Mother and Infants

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## ABSTRACT

**Objective:** To observe the maternal and infant outcomes of pregnant women with twins terminating their pregnancy at different timings. **Methods:** Among the twin pregnant women admitted to our hospital from August 2019 to August 2020, 50 primiparous women who opted to terminate their pregnancies at 5 different timings of “34—34<sup>+6</sup> weeks”, “35—35<sup>+6</sup> weeks”, “36—36<sup>+6</sup> weeks”, “37—37<sup>+6</sup> weeks”, “38—38<sup>+6</sup> weeks” were selected as the research subjects. According to the timing of pregnancy termination, they were divided into 5 groups, each with 10 cases of pregnant women, and the impact of the timing of pregnancy termination on the outcome of the mothers and infants were compared. **Results:** The “37—37<sup>+6</sup> weeks” group had the largest amount of postpartum hemorrhage, and the difference in Hb level before and after delivery was the largest. With the increase in gestational week, the weight of both large and small fetuses increased. In terms of neonatal diseases, the comparison between “34—34<sup>+6</sup> weeks”, “35—35<sup>+6</sup> weeks”, “36—36<sup>+6</sup> weeks” and “37—37<sup>+6</sup> weeks”, “38—38<sup>+6</sup> weeks”,  $P < 0.05$ , the comparison between “37—37<sup>+6</sup> weeks” and “38—38<sup>+6</sup> weeks”,  $P > 0.05$ . **Conclusions:** The extension of the gestational week of twin pregnancies has no effect on postpartum hemorrhage, but it can improve the outcome of infants.

## 1. Introduction

According to the situation in recent years, the development of assisted reproductive technology has been getting better, and it has become more widely used, which has greatly increased the probability of twin pregnancy<sup>[1]</sup>. In fact, twin pregnancy is a high-risk pregnancy mode, the possibility of premature delivery or postpartum hemorrhage is relatively high, and the safety impact on the mother and fetus is relatively huge<sup>[2]</sup>. In order to promote the safety of twin pregnancy, it is necessary to conduct an in-depth analysis of the influence of the timing of twin pregnancy termination on the outcome of the mother and infants<sup>[3]</sup>. This study in our hospital took 50 primiparas with twin pregnancy as the research subjects, and ob-

served and compared the effects of different termination timings on the maternal and infant outcomes. The report is as follows.

## 2. Information and Methods

### 2.1 General Information

The total number of pregnant women admitted to this study was 50, all of whom were primiparous with uncomplicated twin pregnancy. The admission time was from August 2019 to August 2020. According to the results of the lottery, 10 cases of pregnant women with general information  $P > 0.05$  were assigned to “34—34<sup>+6</sup> weeks”, “35—35<sup>+6</sup> weeks”, “36—36<sup>+6</sup> weeks”, “37—37<sup>+6</sup> weeks”,

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weeks”, “38—38<sup>+6</sup> weeks” each, the minimum ages were 27 and 25 years old respectively, the maximum ages were 36 years old and 38 years old respectively, and the average ages were (34.7 ± 3.7) years and (34.9 ± 3.6) years respectively.

## 2.2 Research Methods

5 different timings were chosen for the mothers to terminate the pregnancy, the 24h postpartum blood loss and the 24h hemoglobin (Hb) before and after delivery were observed and recorded, and the infants weights, 1—5min Apgar scores and the incidence of complications were determined.

## 2.3 Diagnosis Criteria

The diagnostic criteria were based on the relevant content of “Obstetrics and Gynecology” (edited by Xie Xing)<sup>[4]</sup>.

## 2.4 Statistical Analysis

Professional statistical software (SPSS 20.0) was used to carry out statistical analysis, X<sup>2</sup> was applied to check n (%), and t-test was applied to check ( $\bar{x} \pm s$ ). If P<0.05, the difference between groups is statistically significant.

## 3. Results

### 3.1 Inter-group Comparison of Timing of Pregnancy Termination and Postpartum Hemorrhage

The “37—37<sup>+6</sup> weeks” group had the highest post-

partum hemorrhage, which was (428.50±380.31) ml, and the difference in Hb level before and after delivery was the largest, which was (13.56±14.97) g/L, as shown in Table 1.

According to Table 1, the inter-group comparison of the timing of pregnancy termination and the postpartum hemorrhage show P>0.05.

### 3.2 Inter-group Comparison of Large and Small Fetal Weight

The heavier fetus in twins is referred to as a large fetus; otherwise it is a small fetus. As the gestational age increases, the weight of the fetus increases, see Table 2.

According to Table 2, the inter-group comparison between large and small fetal weight is P>0.05.

### 3.3 Inter-group Comparison of Neonatal Morbidity

The number of morbid infants in “34—34<sup>+6</sup> weeks”, “35—35<sup>+6</sup> weeks”, “36—36<sup>+6</sup> weeks”, “37—37<sup>+6</sup> weeks”, “38—38<sup>+6</sup> weeks” were 6 (60.00%), 4 (40.00%), 2 (20.00%), 1 (10.00%), and 0 cases respectively. See Table 3 below.

According to Table 3, the comparison between “34—34<sup>+6</sup> weeks”, “35—35<sup>+6</sup> weeks”, “36—36<sup>+6</sup> weeks” and “37—37<sup>+6</sup> weeks”, “38—38<sup>+6</sup> weeks” shows P<0.05, while the comparison between “37—37<sup>+6</sup> weeks” and “38—38<sup>+6</sup> weeks” shows P>0.05.

**Table 1.** Inter-group Comparison of Timing of Pregnancy Termination and Postpartum Hemorrhage ( $\bar{x} \pm s$ )

Weeks of Pregnancy	Postpartum Hemorrhage(ml)	Difference in Hb Level before and after Delivery(g/L)
34—34 <sup>+6</sup> Weeks(n=10)	312.6±189.99	10.76±13.26
35—35 <sup>+6</sup> Weeks(n=10)	307.70±99.8	8.68±9.51
36—36 <sup>+6</sup> Weeks(n=10)	363.3±199.66	12.22±10.83
37—37 <sup>+6</sup> Weeks(n=10)	428.50±380.31	13.56±14.97
38—38 <sup>+6</sup> Weeks(n=10)	333.34±141.43	8.56±11.62

**Table 2.** Inter-group Comparison of Large and Small Fetal Weight ( $\bar{x} \pm s$ , g)

Gestation Week	Large Fetal Weight	Small Fetal Weight
34—34 <sup>+6</sup> Weeks(n=10)	2261.12±217.70	2001.12±189.07
35—35 <sup>+6</sup> Weeks(n=10)	2598.76±288.73	2323.14±297.39
36—36 <sup>+6</sup> Weeks(n=10)	2611.39±299.36	2344.84±248.00
37—37 <sup>+6</sup> Weeks(n=10)	2813.76±272.86	2539.18±249.34
38—38 <sup>+6</sup> Weeks(n=10)	3021.55±405.01	2598.47±323.78

**Table 3.** Inter-group Comparison of Neonatal Morbidity *n*(%)

Neonatal Diseases	34—34 <sup>+6</sup> Weeks(n=10)	35—35 <sup>+6</sup> Weeks(n=10)	36—36 <sup>+6</sup> Weeks(n=10)	37—37 <sup>+6</sup> Weeks(n=10)	38—38 <sup>+6</sup> Weeks(n=10)
Neonatal Asphyxia	0	0	0	0	0
Intracranial Hemorrhage	1(10.00)	1(10.00)	1(10.00)	0	0
Respiratory Distress	1(10.00)	0	0	0	0
Septicemia	0	1(10.00)	0	0	0
Neonatal Infection	2(20.00)	1(10.00)	1(10.00)	1(10.00)	0
Neonatal Necrotizing Enterocolitis	0	0	0	0	0
Neonatal Pneumonia	2(20.00)	1(10.00)	0	0	0
Total Morbidity	6(60.00)	4(40.00)	2(20.00)	1(10.00)	0

#### 4. Discussions

Twin pregnancies are becoming more and more common today. It can be divided into two types, namely “uncomplicated twin pregnancies” and “complicated twin pregnancies”, of which “complicated twin pregnancies” are twin pregnancies with multiple complications such as reverse arterial perfusion sequence syndrome, selective fetal growth restriction, and twin anemia-multiple blood sequence syndrome, *etc.* [5] If there are no such complications, it is classified as “uncomplicated twin pregnancy”. Generally speaking, the delivery timing of twin pregnancy should be within 39 weeks, and if there are no complications, twin pregnancy termination between 37 weeks and 38 weeks should be considered [6]. Therefore, this study set the upper limit of the gestational week for twin pregnancies at 38 weeks, and the reason why 34 weeks was set as the lower limit of the gestational week for twin pregnancies was mainly because of the lung functions of the fetus was basically mature at 34 weeks of gestation. When the pregnancy is terminated at this timing, the survival rate of the fetus is higher [7].

From a practical point of view, there is excessive extension of uterine muscle fibers in women pregnant with twins, which leads to uterine contraction fatigue after delivery, resulting in a significant increase in the probability of postpartum bleeding [8]. Moreover, the estimation of postpartum hemorrhage is more significantly affected by human factors, so there is a certain degree of uncertainty [9]. Therefore, in this study, the difference in hemoglobin before and after delivery was also selected for observation in addition to postpartum hemorrhage [10]. The results show that the timing of pregnancy termination does not affect the incidence of maternal postpartum hemorrhage.

This study showed that the “37—37<sup>+6</sup> weeks” group had the highest postpartum hemorrhage, which was (428.50 ± 380.31) ml, and the difference in Hb level before and after delivery was the largest, which was (13.56 ± 14.97) g/L. As the gestational age increases, the weight

of the large and small fetuses both increase. The numbers of neonatal morbidity were 6 (60.00%) cases, 4 (40.00%) cases, 2 (20.00%) cases, 1 (10.00%) cases, and 0 cases in “34—34<sup>+6</sup> weeks”, “35—35<sup>+6</sup> weeks”, “36—36<sup>+6</sup> weeks”, “37—37<sup>+6</sup> weeks”, and “38—38<sup>+6</sup> weeks” respectively. In terms of neonatal diseases, the comparison between “34—34<sup>+6</sup> weeks”, “35—35<sup>+6</sup> weeks”, “36—36<sup>+6</sup> weeks” and “37—37<sup>+6</sup> weeks”, “38—38<sup>+6</sup> weeks” shows  $P < 0.05$ , while the comparison between “37—37<sup>+6</sup> weeks” and “38—38<sup>+6</sup> weeks” shows  $P > 0.05$ .

To sum up, the difference in the timing of twin pregnancy termination will basically not affect the postpartum hemorrhage of the parturient. As for the infants with longer gestational age, heavier fetal weight, and at gestational weeks between 37 and 38 weeks, the morbidity is significantly reduced, showing that the timing of twin pregnancy termination can affect the outcome of infants.

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