Discordant fetal growth in twin pregnancies

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Abstract

Objective: The aim of the following work was to determine the impact of discordant fetal growth on the course of pregnancy and fetal outcome. Material and methods: The study included 453 pregnant women with twins, who were hospitalized in the Department of Perinatology and Gynecology, University of Medical Sciences in Poznań. Gestational age ranged between 12 and 40 weeks of gestation. The analysis was performed in the following groups: A. The first group consisted of 406 twin pregnancies between 24 and 40 weeks gestation. Occurrence of discordant fetal growth with an evaluation of selected parameters, characterizing pregnancy course and fetal outcome were analyzed in that group. B. The second group consisted of 322 uncomplicated twin pregnancies between 24 and 40 weeks gestation. Reference ranges of birth weight were established in that group. The study was performed to evaluate discordant fetal growth and to assess fetal blood flow in selected vessels in pregnancies with symmetrical and discordant fetal growth. Results: Comparing the curves of the birthweight in single and twin pregnancy different dynamics of growth of the twins after 28 week has been found. It was noticed that the discordant fetal growth in multiples, defined as the birthweight disparity of more than 15%, correlates with abnormal course of pregnancy and poor fetal outcome. It seems that the observed changes are largely associated with increased prematurity rate and incidence of SGA infants. It seems also that the degree of discordant fetal growth may be crucial for the fetal prognosis. Conclusions: Different rate of growth after 28 weeks was found in twin pregnancies when compared to single pregnancies. Discordant fetal growth in multiples correlates with abnormal course of pregnancy and poor fetal outcome. The degree of divergent growth is crucial for fetal prognosis.

Key words: fetal growth, twin pregnancy, discordant growth

Introduction

Fetal growth restriction is one of the causes of increased morbidity and mortality of infants in multiple pregnancies. What is more, it is often the cause of discordant, asymmetric fetal growth. Literature offers at least three basic definitions of discordance. The first is based on the absolute difference in birth weight between twins, and the suggested limit is 250 g [7, 9] or 300 g [14]. However, absolute differences in birth weight are rarely used in practice. The second definition applies to the differences of masses, expressed in standard deviations referred to the mean birth weight of twins in the population. This definition, although precise in statistical terms, is relatively difficult to apply in practice and can only be used in retrospective studies to determine the mean birth weight in twin pregnancies. The third most widely used definition of the difference in birth weight between twins is expressed as a percentage (%) of the birth weight of the larger twin. Values ≥ 15% (9) up to ≥ 40%, depending on the author, are considered to be defining the discordant fetal growth.

None of the abovementioned definitions allows us to distinguish between discordant growth and intrauterine growth restriction. Discordant growth may apply to fetuses of normal birthweight for gestational age (AGA). Conversely, fetuses with growth restriction have similar birthweight, not showing the characteristic growth discordance. Intrauterine growth restriction in synergistic manner may affect the growth and fetal outcome in twins with discordant growth. Studies examining the relationship between intrauterine growth restriction and growth discrepancy are not satisfactory and explanatory. Fetal growth rate in twin pregnancies up to about 30 weeks gestation is similar to that observed in a single pregnancy [1]. In the third trimester of the twin pregnancy the so-called physiologic slowdown of the fetal growth, when compared to a single pregnancy, occurs. This process is even more evident in triplets. For this reason, for the assessment of fetal growth disorders, the use of twin reference curves is recommend. The incidence of fetal growth abnormalities in multiples (MP) increases significantly comparing to single pregnancies (SP). The main
factors determining the growth of the fetus are genetic factors and placental function. Fetuses from monochorionic pregnancies (MC) seem to share the same genetic potential and the same placenta. However, in dichorionic pregnancies (DC), these factors can vary significantly for each fetus. Reasons for restricted fetal growth in multiples may be similar as in SP, including placental insufficiency, early intrauterine infection, chromosomal abnormalities, structural anomalies and constitutional factors [10, 20]. In addition, in monochorionic twins the reason of discordant fetal growth may be vascular anastomoses and asymmetric placenta sharing. The risk of abnormal fetal growth is higher in MC pregnancies (7.5%) than DC (1.7%) [21]. Nevertheless, these values may change if we take into account chorionicity while creating reference curves in multiples.

Before the era of ultrasound, diagnosis of discordant growth of twins was nearly impossible. Imaging methods have created opportunities for comparison of certain parameters describing growth and development of twins. Fetal growth abnormalities occur in the form of the divergent growth and small for gestational age (defined as weight lower than two standard deviations or below 5 percentile for given gestational age). Discordant fetal growth is usually defined on the basis of the estimated difference in body weight, expressed as a percentage of the weight of the larger fetus. Different values defining the discordant fetal growth can be found in literature, from 15 to 40%.

The current schedule of diagnosis of asymmetrical growth in twins is presented in table 1.

**Table 1. Ultrasound evaluation of fetal growth in discordant twins [9]**

<table>
<thead>
<tr>
<th>Discordant growth criteria</th>
<th>BPD 1 – BPD 2 ≥ 5 mm</th>
<th>[HC 1 – HC 2]/ HC 1 × 100% ≥ 5%</th>
<th>AC 1 – AC 2 ≥ 20 mm</th>
<th>FL 1 – FL 2 ≥ 5 mm</th>
<th>[EFW 1 – EFW 2]/EFW1 × 100% ≥ 15%</th>
<th>[S/D 1 – S/D 2]/ SD1 × 100% ≥ 15%</th>
</tr>
</thead>
</table>

If the difference of the estimated body weight is greater than 15%, there is a high probability of first degree discordance. If the difference in estimated fetal body weight is greater than 25%, second degree of discordance is suspected. In the later case, risk of unfavorable prognosis for the smaller fetus is significantly elevated [5].

The aim of this study was to determine the importance of discordant fetal growth in multiples for fetal and newborn outcome on the basis of the following specific objectives:

1) to establish standard curves of selected parameters that characterize fetal development in twin pregnancies.

2) to analyze the influence of discordant fetal growth in twin pregnancies on selected parameters which characterize the course of the pregnancy and fetal outcome.

**Materials and methods**

The study included 453 patients pregnant with twins, hospitalized in the Department of Perinatology and Gynecology, University of Medical Sciences in Poznan. Gestational age ranged between 12 and 40 weeks gestation. Maternal age ranged from 17 to 42 years. The analysis was performed in the following groups:

1) The first group consisted of 406 twin pregnancies between 24 and 40 weeks gestation; the occurrence of discordant fetal growth was analyzed and selected parameters, characterizing pregnancy course and fetal outcome were evaluated;

2) The second group consisted of 322 twin pregnancies between 24 and 40 weeks gestation; in the group the reference ranges of birth weight were established; Gestational age was determined on the basis of the date of last menstrual period or ultrasound in the first trimester.

Discordant fetal growth analysis was carried out in a group of 406 patients. Discordance was defined on the basis of the birthweight difference, expressed as a percentage of the weight of the larger fetus (weight of the larger fetus – weight of the smaller fetus)/weight of the larger fetus × 100%). The cut off value was 15% [24]. Fetuses were divided into subgroups depending on the degree of discordance:

- < 15% – concordant fetal growth,
- 15-24.9% – discordant fetal growth (grade I),
- 25-34.9% – discordant fetal growth (grade II),
- ≥ 35% – discordant fetal growth (grade III).

The evaluation was performed according to subgroups among the masses. The impact of the discordance degree on selected features was analyzed:

- fetal outcome,
- mode of delivery and date of birth,
- number of newborns with birth body weight <1000 g and < 1500 g,
– the presence of marginal or membranous attachment of umbilical cord,
– incidence of abnormal Doppler blood flow in the umbilical artery and middle cerebral artery.

The control group was formed by twin pairs with birthweight difference under 15%.

In the group of 322 patients reference ranges of twin birthweight were created. All pregnancies complicated by chronic diseases, death of one or both fetuses, malformation and complications such as TTTS, TRAP, etc., were excluded from this group. Percentile nets of birthweight have been drawn on the basis of 644 newborns. Infants weighing less than 5 percentile were defined as SGA (small for gestational age) and infants weighing more than 95 percentile were defined as LGA (large for gestational age). Percentile curves were created on the basis of the methodology submitted by Altaman and Chitty [3]. The study was conducted using an Acuson 128 XP and 730 EXPERT VOLUSON. In each case fetal biometry was done. Fetal weight was assessed automatically by a computer. Determination of acid-base balance parameters was performed in each case after birth from umbilical vein and artery, and immediately determined with the camera AVL 993 Automatic Blood Gas System. The scope of analysis included the following values: pH and BE.

Fetal outcome was assessed on the base of acid-base balance parameters and Apgar score at the 1st and 5th minute of life.

The newborn status was defined as abnormal when:
• Apgar score at 5th minute was < 7 points or
• the value of umbilical artery pH < 7.20 or
• the value of BE < −12 mEq/l.
Other values were considered normal.

Calculations were done using the statistical package STATISTICA Data Miner version 6.1.318.0 (StatSoft, Inc. 2003), v. 5.0.3 package StatXACT company CYTEL SOFTWARE CORPORATION’s package GraphPad Instat Software. Analyze-it Software v. 1.68.

Results

Reference ranges of twin birthweight.

Designated curves indicate the nature of the optimal growth of twins in the study group, referring specifically to birthweight. The curves are presented in Fig. 1a, 2a and 3a. Figure 1a illustrates the birthweight percentiles in the population of 644 twins. The median (50 percentile) of twin birthweight was also compared with single pregnancies [22]. Analyzing the value of 50th percentile in Fig. 1b a reduction of twin values above 28 weeks can be clearly seen. Similar phenomenon can be observed in Fig. 2b and 3b, which represent the value of 50th birthweight percentile among males and females.

Comparing twin percentile curves (Fig. 2a and 3a) it should be noted that similarly to singleton pregnancies, male newborns have a higher birthweight compared to female newborns. Figures 2 and 3 present the percentile curves for male and female newborns, respectively (a) and 50th percentile in twins and singletons (b).

Fig. 1. a) Standard curve of twin birthweight; b) Comparison of curves illustrating the value of 50th percentile birthweight from a singleton and twin pregnancy [22]
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Fig. 2. a) Standard birth weight curve of male twins; b) Comparison of curves illustrating the value of 50th percentile birth weight of male infants born in a singleton and twin pregnancy [22]

Fig. 3. a) Standard birthweight curve of female twins; b) Comparison of curves illustrating the value of 50th percentile of female newborns birthweight with a singleton and twin pregnancy [22]

Analysis of discordant fetal growth

Table 2 shows the incidence of four degrees of fetal birthweight discordance in 406 twin pregnancies.

<table>
<thead>
<tr>
<th>The degree of discordance (%)</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-14.9</td>
<td>265</td>
<td>65.3</td>
</tr>
<tr>
<td>15.0-24.9</td>
<td>83</td>
<td>20.4</td>
</tr>
<tr>
<td>25.0-34.9</td>
<td>41</td>
<td>10.1</td>
</tr>
<tr>
<td>≥ 35</td>
<td>17</td>
<td>4.2</td>
</tr>
<tr>
<td></td>
<td>406</td>
<td>100.0</td>
</tr>
</tbody>
</table>

Disproportion of birthweight ≥ 15% was found in 34.7% of twin pairs. Mostly fetal discordance was observed in the range 15.0-24.9% (20.4%), less frequently in the range (25.0-34.9%) (10.1%), and very rarely ≥ 35% (4.2%).

Table 3 presents the data on pregnancy outcomes among twin pairs with growth discordance. Significance of differences was assessed comparing to the group 0-14.9%, which constituted the control group. 6 pairs of twins were excluded from the study, of which in three cases, one of the fetuses was born by means of vacuum extractors and three cases, among which one of the fetuses was born using forceps operation.
Table 3. The impact of the discordance degree on selected parameters characterizing the course of pregnancy

<table>
<thead>
<tr>
<th>Growth discordance</th>
<th>0-14.9 (%)</th>
<th>15.0-24.9 (%)</th>
<th>25.0-34.9 (%)</th>
<th>≥ 35.0 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>29.0 ± 5.2</td>
<td>28.2 ± 5.3</td>
<td>28.0 ± 5.0</td>
<td>29.0 ± 5.3</td>
</tr>
<tr>
<td>Range (years)</td>
<td>18.0-47.0</td>
<td>17.0-40.0</td>
<td>21.0-41.0</td>
<td>20.0-41.0</td>
</tr>
<tr>
<td>Gestational age at delivery (weeks) (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥ 30 t.c. (%)</td>
<td>15.8</td>
<td>10.8</td>
<td>0.0</td>
<td>23.5</td>
</tr>
<tr>
<td>31-34 t.c. (%)</td>
<td>22.4</td>
<td>12.1</td>
<td>22.0</td>
<td>29.4</td>
</tr>
<tr>
<td>35-36 t.c. (%)</td>
<td>29.9</td>
<td>26.5</td>
<td>31.7</td>
<td>29.4</td>
</tr>
<tr>
<td>≥ 37 t.c. (%)</td>
<td>31.9</td>
<td>50.6</td>
<td>46.3</td>
<td>17.7</td>
</tr>
<tr>
<td>Primipara (%)</td>
<td>42.1</td>
<td>43.4</td>
<td>51.2</td>
<td>47.1</td>
</tr>
<tr>
<td>Cesarean section (%)</td>
<td>70.5</td>
<td>69.6</td>
<td>85.4</td>
<td>100.0*</td>
</tr>
<tr>
<td>Spontaneous delivery (%)</td>
<td>29.5</td>
<td>30.4</td>
<td>14.6</td>
<td>0.0*</td>
</tr>
<tr>
<td>Abnormal umbilical cord attachment (%)</td>
<td>13.9</td>
<td>24.4*</td>
<td>42.1**</td>
<td>41.7***</td>
</tr>
</tbody>
</table>

* or ** or *** in relation to the group 0-14.9%

Table 4. The impact of fetal growth discordance on fetal outcome

<table>
<thead>
<tr>
<th>Growth discordance</th>
<th>0-14.9 (%)</th>
<th>15.0-24.9 (%)</th>
<th>25.0-34.9 (%)</th>
<th>≥ 35.0 (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ap 1' (median)</td>
<td>8</td>
<td>9</td>
<td>9</td>
<td>5*</td>
</tr>
<tr>
<td>Ap 5' (median)</td>
<td>9</td>
<td>10</td>
<td>10</td>
<td>8*</td>
</tr>
<tr>
<td>Ap 5' &lt; 7 (%)</td>
<td>13.9</td>
<td>12.7</td>
<td>8.5</td>
<td>20.6</td>
</tr>
<tr>
<td>pHv</td>
<td>7.31 ± 0.08</td>
<td>7.32 ± 0.08</td>
<td>7.30 ± 0.09</td>
<td>7.27 ± 0.09*</td>
</tr>
<tr>
<td>pHa</td>
<td>7.27 ± 0.09</td>
<td>7.27 ± 0.08</td>
<td>7.28 ± 0.09</td>
<td>7.25 ± 0.10</td>
</tr>
<tr>
<td>pHa &lt; 7.2 (%)</td>
<td>15.7</td>
<td>15.7</td>
<td>25.6</td>
<td>50.0*</td>
</tr>
<tr>
<td>BEv (mmol/l)</td>
<td>-2.7 ± 3.2</td>
<td>-2.5 ± 2.9</td>
<td>-3.1 ± 3.3</td>
<td>-2.4 ± 3.0</td>
</tr>
<tr>
<td>BEa (mmol/l)</td>
<td>-4.1 ± 3.8</td>
<td>-3.8 ± 4.0</td>
<td>-4.0 ± 3.8</td>
<td>-4.5 ± 5.6</td>
</tr>
<tr>
<td>BEa &lt; -12 mmol/l (%)</td>
<td>2.3</td>
<td>3.4</td>
<td>4.5</td>
<td>4.9</td>
</tr>
<tr>
<td>Abnormal fetal outcome (%)</td>
<td>28.5</td>
<td>24.1</td>
<td>28.1</td>
<td>55.9*</td>
</tr>
<tr>
<td>Birthweight (g)</td>
<td>2246 ± 662</td>
<td>2291 ± 632</td>
<td>2265 ± 628</td>
<td>1709 ± 673*</td>
</tr>
<tr>
<td>Birthweight &lt; 1000 g (%)</td>
<td>5.9</td>
<td>5.4</td>
<td>4.2</td>
<td>11.8</td>
</tr>
<tr>
<td>Birthweight &lt; 1500 g (%)</td>
<td>15.6</td>
<td>12.7</td>
<td>8.5</td>
<td>44.1*</td>
</tr>
</tbody>
</table>

* in relation to the group 0-14.9%

An increase of the cesarean section incidence has been shown in the study, which correlated with increasing degree of twin discordance. Statistical significance was reported only for group ≥ 35%. There were no statistically significant differences in gestational age at delivery between the analyzed groups. Interestingly enough, over 50% of twins with discordance of more than 35%, were born before 35 weeks gestation. Statistically significant increase in the incidence of abnormal umbilical cord attachment in all compartments of analyzed discordance compared to the control group was found as well. It has been the most frequent if the discordance was ≥ 35% (41.7%).

Table 4 shows no statistically significant differences in the incidence of Apgar scores < 7 points at 5th minute, incidence of BEa < -12 mmol/l and the mean values of pH and BE in the umbilical artery and umbilical vein, BEv in the analyzed groups.

In the group with growth discordance above 35%, a statistically significant increase in the incidence of PHa
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Discordant fetal growth in twin pregnancies

No uniform rules for the creation and construction of reference curves have been established [19]. Selection criteria and choice criteria have a significant impact on the development of the curves. A rule is a precise definition of the population, on the basis of which a particular curve is created. It should be noted that the created curves represent changes in the size of newborns, not reflecting the dynamic growth of the fetus, for which the curves should be based on a serial measurements of one fetus, the so-called "longitudinal study" [3].

Many researchers use birthweight when constructing percentile curves [1, 2] while others try to use fetal biometric measurements [17]. Some authors call for the creation of universal reference curves irrespective of the number of fetuses [11]. Increasingly, however, the need to create percentile curves only for the twin population is voiced [1, 13, 25].

Percentile birthweight curves in twin pregnancies clearly illustrate the different dynamics of growth in the third trimester compared to the singletons. Comparing median values in Fig. 1b in the population of twins and singletons [22], a reduction of its value after 28 weeks gestation among twins can be clearly seen. The median in 28 weeks was approximately 1300 g in singleton and 1100 g in twin pregnancy, in 30 weeks 1700 g, and 1500 g, in 32 weeks 2000 g and 1700 g, in 34 weeks 2400 g and 2100 g, and in 40 weeks 3600 g and 3000 g, respectively. A similar tendency can be observed in Fig. 2b and 3b, which represent the value of 50th percentile in male and female newborns in multiple and singleton pregnancy. Lower birthweight infants from twin pregnancies born after 28 weeks may be due to different dynamics of twins growth, resulting not only from abnormal development but also different intrauterine conditions, such as the so-called ‘intrauterine crowding’ (resulting from the fact that two fetuses share the same space inside the uterus). Similar dynamics of growth during multiple pregnancy was observed by other investigators [6]. This fetal growth reduction of twins in the third trimester of pregnancy has a major impact on the proper selection of fetuses with low birth weight (SGA). Application percentile curves for newborns from a singleton pregnancy would result in a clear increase in the number of SGA infants among twins. If we take into account the different nature of twins growth, i.e. the percentile curves for twin pregnancy, the characteristics of the SGA infant in twins can be correctly defined.

Comparing percentile curves of twins, the difference between males and females can be seen similarly to
singletons. Male newborns have a higher birthweight compared to females (Fig. 2b and 3b). This difference in mass may also play a role in the diagnosis of discordant growth, especially in pairs of different sexes. It is believed that female infants are smaller not because of the restricted intrauterine growth, but perhaps because male fetuses are more promoted in the development. It is believed that female gender may also be one of the potential causes of low degree of discordance, especially when other causes of growth discordance cannot be found.

**Discordant fetal growth**

Studies on discordant fetal growth in twin pregnancy in recent years have reached breaking point. It is a direct consequence of the phenomena occurring in twin pregnancy and the intrauterine environment’s inability to meet the increased needs resulting from the presence of several fetuses. The incidence of twins with discordant growth is directly related to the type of definition used. It was noted that with increasing degree of discordance the incidence of twin pairs with large discordance decreases [5]. In many works different data regarding the incidence of discordant fetal growth can be found. Discordance in range of 15-25% occurs in 4 to 23% of cases [5]. The incidence of a slight discordance degree is similar in most works. By contrast, a higher degree of discordance is cited by authors with varying frequency. Differences in ethnic and socioeconomic groups in tested populations may be a possible explanation for this phenomenon. It is possible that these differences also result from the study groups, mainly comprising cases of complicated pregnancies admitted to the reference centers, which are expected to be more frequent in these centers. In the presented study the discordant growth of the twins was defined on the basis of birthweight difference expressed as a percentage (%) of larger twin birthweight, and the value ≥ 15% was taken as the criterion of discordant growth [5, 16].

Discordant fetal growth is common in multiple pregnancies, and the incidence depends, as already mentioned, on the accepted definition. It may be a sign of abnormal growth of one of the fetuses. We also know that with the increase of discordant growth degree perinatal mortality increases as well [15]. So far, however, clinical significance of this growth disorders in multiple pregnancy has not been specified. In the literature a number of controversial views and ambiguous opinions concerning its effect on pregnancy course and fetal outcome can be found [4, 15, 24]. Therefore, the main objective of this work was to demonstrate whether there exists a risk arising from the discordant growth of twins. If so, whether there are any implications of this phenomenon for the twins. For this purpose, the incidence (Table 2) and the impact of the discordance degree on selected parameters characterizing pregnancy course (Table 3), and fetal outcome (Table 4) have been analyzed. The discordance of 15.0 to 24.9% (20.4%) was observed most frequently and over 35.0% (4.2%) least frequently, similarly to Hollier et al. (21.0 and 4.0%) [15]. An increase of cesarean section incidence with a rise of the discordance degree in twin pairs has been shown. There were no statistically significant differences in the gestational age at delivery. However, over 50% of twins from the last group (≥ 35%) were born before 35 weeks gestation. The mean birthweight was the lowest in this group. In addition, in this group infants weighing < 1000 g and < 1500 g were born more frequently, while for the last of the differences there was a statistical significance. A significant increase in the incidence of abnormal umbilical cord attachment in all compartments analyzed growth discordance compared to the control group was also observed. In the discordance group of ≥ 35%, a statistically significant increase in the incidence of PHa < 7.2, abnormal fetal outcome, and lower Apgar scores at 1 and 5 minute of life were found in relation to the group with symmetrical growth. Lower mean pH values obtained from both the artery and umbilical vein were noted, however, there was a statistical significance only in relation to the vein. Similar results were obtained by Yalcin et al. when analyzing a group of 384 twin pairs [24]. The twins were divided into 6 subgroups depending on the degree of growth discordance. In the group of discordance > 30% more frequent occurrence of Apgar score < 7 at 5 minute was observed comparing to the group with discordance of < 10%, but this difference was not statistically significant. In the first group an increased incidence of admissions to the Neonatal Intensive Care (41.7%) was observed. In addition, newborn mortality in this group was significantly higher compared to the second group. The paper suggested a potential relationship between the degree of discordant growth and the prognosis for the fetus and newborn, suggesting that the higher the degree, the worse the prognosis for the twins. Similar results were obtained in the presented work, in which the highest percentage of poor fetal outcome and abnormal pregnancy course were recorded.
in cases with the highest discordance (Table 3 and 4). An increase in perinatal mortality in twin pairs with discordance of 30% and more was also observed by Cheung et al [8]. However, the results of these studies concerned only twins born prematurely. Therefore, analyzing the causes of perinatal mortality one should be aware of the significant effect of prematurity on the results.

Hollier et al. presented interesting observations regarding a group of 1370 twin pregnancies [15]. She noted that premature births (<34 weeks) in the group showing the highest degree of twin growth discordance resulted mainly from iatrogenic causes, such as cesarean sections. A similar connection was found in the presented work. The percentage of cesarean sections in the group of more than 35% discordance was 100% (Table 3). Hollier and colleagues also noted increased incidence of low birth weight, admission to the Neonatal Intensive Care Unit and respiratory distress syndrome with increasing discordance degree. It was also suggested that a significant degree of growth discordance was associated with a significant risk of intrauterine death, simultaneously indicating that the increase of newborn mortality was linked to prematurity as a result of the increase of the frequency of operational medical interventions. Other investigators presented similar conclusions [7, 8, 18, 20]. Only a few authors have stressed lack of link between diagnosis of growth discordance and making the decision to deliver earlier [23].

Summarizing, the question remains whether the discordant fetal growth is an anomaly. It seems that the answer depends on the degree of discordance. A small degree of discordance is not always unequivocal with an abnormal growth. Is not synonymous with impaired growth, but an exponent of the intrauterine development in multiple pregnancy. You can even postulate that the discordant growth of the twins could be some kind of biological variation, especially at lower degrees of disparity. There are suggestions that the greater the ability of the uterus to ensure optimum conditions for the fetal development, the less likely the discordant growth can be seen [6]. The more limited the ability of the uterus to establish the appropriate environment for the development of twins, the greater the likelihood of unbalanced growth, which can also be a kind of adaptive mechanism for reduced intrauterine space [6]. The next issue to be addressed is whether the discordant growth has important clinical significance. It seems that the answer should be affirmative, especially in the higher stages of developmental discordance, because it is accompanied by an increased incidence of premature deliveries, hence prematurity and associated perinatal mortality. Moreover, the degree of discordant growth appears to be crucial for the fetal prognosis, i.e. the greater the degree of discordance, the more likely low birth weight, which obviously affects fetal outcome. Effective adaptation to disturbed intrauterine conditions, which consists of a small degree of growth restriction of one of the fetuses, resulting in the development of growth discordance, is not associated with adverse outcome. However, if adaptive mechanisms are exhausted and intrauterine environment will not be able to ensure proper development, it can lead to a significant degree of growth restriction of one of the fetuses, which is often associated with poor fetal outcome, and sometimes even with intrauterine death [6].

Conclusions

1) In twin pregnancies different dynamics of growth after 28 weeks can be observed when comparing to a singleton pregnancy.
2) Discordant fetal growth in multiple pregnancies correlates with abnormal course of pregnancy and poor fetal outcome. It seems that the observed changes are mainly associated with an increased incidence of immature newborns and low birthweight.
3) The degree of discordant growth is crucial for fetal prognosis. Therefore, discordant fetal growth may not always be considered as a synonym of impaired growth but also for the exponent of intrauterine development in multiples.

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References


