Chapter

# Multifetal Gestations

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## Abstract

In recent years, multiple pregnancy rates have increased significantly. Twin pregnancy rate increased by 76% between 1980 and 2009, from 18.9 to 33.3 in 1000 births. Triplets and high-order multiple pregnancies have increased by 400% in the 1980s and 1990s. Two main reasons of this increase in the incidence of multiple pregnancies are: (1) maternal age at the time of conception, shifting to advanced ages where multiple pregnancies are more common and (2) a more common use of assisted reproductive techniques. The main problem in multiple pregnancies is spontaneous preterm delivery and associated neonatal morbidity and mortality. Although numerous attempts have been made to prolong the gestation period and improve outcomes, none of them have been effective. In this article, the complications encountered in multiple pregnancies will be summarized and evidence-based approaches that can be used in their management will be reported.

**Keywords:** twins, triplets, monozygotic, dizygotic

## 1. Introduction

Multiple pregnancy rates have increased significantly in recent years. The twin pregnancy rate increased from 18.9 to 33.3 per 1,000 births between 1980 and 2009, increasing by 76% [1]. Multiple pregnancies with triplets and higher numbers increased by 400% in the 1980s and 1990s [2]. There are two main reasons for this increase in the incidence of multiple pregnancies: (1) Maternal age at the time of conception is shifting to advanced ages with multiple pregnancies and (2) a more common use of assisted reproductive techniques [3].

The main problem encountered in multiple pregnancies is spontaneous preterm labor and associated neonatal morbidity and mortality. Although several attempts have been made to prolong the duration of these pregnancies and improve outcomes, none of them have been effective. In this chapter, the complications encountered in multiple pregnancies will be summarized and evidence-based approaches that can be applied in their management will be reported.

## 2. Fetal and neonatal morbidity and mortality

Due to complications caused by preterm labor, stillbirth rate in multiple pregnancies is five times higher, and neonatal mortality rate is seven times higher than other pregnancies. A woman with a multiple pregnancy is 6 times more likely to have a preterm delivery and 13 times more likely to give birth before 32 weeks of gestation [4].

In multiple pregnancies, short- and long-term morbidity has also increased. Severe intraventricular hemorrhage and periventricular leukomalacia are two times more common in twins born before 32 weeks of gestation than in single babies born in the same week [5], and this explains the increased rate of cerebral palsy in multiple pregnancies [6].

In multiple pregnancies, still due to the prematurity, health expenses in both antenatal and neonatal periods are higher [7]. The spending made for preterm babies in the year after birth reaches 10 times the spending for full-term babies [8].

## 3. Chorionicity

Ultrasound is the reliable method to detect multiple pregnancies [9]. Ultrasound shows the number of fetuses, gestational week, chorionicity, and amnionicity. It is very important to detect chorionicity which is best assessed by ultrasound in the first or early second trimester.

Fetal and neonatal mortality and morbidities such as congenital anomaly, prematurity, and intrauterine growth restriction are much more common in monochorionic twins than in dichorionic twins [10, 11]. This also applies to high number of multiple pregnancies; completely monochorionic or monochorionic twin pairs have a higher risk of developing complications compared to trichoricionic triplet pregnancy [12, 13]. Thus, chorionicity should be determined in the late stages of the first trimester or early second trimester for the management of multiple pregnancies and consultancy.

## 4. Maternal morbidity and mortality

Medical complications such as hyperemesis, gestational diabetes, hypertension, anemia, bleeding, cesarean section, and postpartum depression are more common in women with multiple pregnancies [14–20]. These complications are managed as in singleton pregnancies.

The incidence of hypertensive complications is proportional to the number of fetuses, with 6.5% in singleton pregnancies, 12.7% in twins, and 20% in triplets [21].

In one study, it was found that the risk of developing mild or severe preeclampsia in pregnancies achieved by assisted reproductive techniques was 2.1 times higher than other pregnancies with the same maternal age and parity [22].

Preeclampsia occurs both more frequently (relative risk 2.6) and earlier in twin pregnancies. This results in a higher probability of developing complications such as birth before 35 weeks of gestation (34.5% in twins vs. 6.3% in singles) and ablation of the placenta (4.7% in twins vs. 0.7% in singles) [16]. While preeclampsia is more common in patients with higher-order gestations, it is atypical [23]. If hemolysis, elevated liver enzymes, and low platelet count (HELLP syndrome) occur before term, the patient's referral to the third line will be better for both the mother and the fetus [24].

The incidence of multiple pregnancy increases with age, regardless of assisted reproductive techniques. While the multiple pregnancy rate in women aged under 20 is 16.3 per 1000 live births, this rate is 71.1 per 1000 live births in women over 40 [2]. Regardless of the number of fetuses, obstetric complications such as gestational hypertension, gestational diabetes, and ablation placenta are more common in older women.

## 5. Effect of assisted reproductive techniques

In the past years, the proliferation of assisted reproductive techniques has led to a serious increase in multiple pregnancy rates [1]. In recent years, there was a decrease in higher-order gestation rates with the limitation of the number of embryos transferred in vitro fertilization (IVF) and the proliferation of embryo reduction. The techniques that cause the most increase in the number of multiple pregnancies are IVF and controlled ovarian hyperstimulation with gonadotropins. According to the most recent data obtained in 2010, 26% of IVF pregnancies result in twins, and 1.3% in higher-order gestations [25].

## 6. Embryo reduction and selective feticide

Embryo reduction causes a decrease in the risk of spontaneous preterm labor and other obstetric complications with decreased fetal number. In a Cochrane review, it was reported that the pregnancy loss, antenatal complication, preterm birth, low birth weight, and cesarean and neonatal death rates in pregnant women undergoing triplet-to-twin reduction were much lower than in those continuing as triplets and were close to the rates seen in spontaneous twins [26]. Embryo reduction in higher-order gestations also reduces the risk of preeclampsia. In one study, the preeclampsia incidence was 17% in pregnancies with reduction to twins and 30% in pregnancies continuing as triplets [27].

In embryo reduction, the decision of which fetus or fetuses will be treated is determined according to chorionicity and easy accessibility. When one of the monochorionic twin pair is reduced, it is recommended that both monochorionic pair be reduced, since the harmful effects on the other twin are not fully known.

Selective feticide is the reduction of abnormal fetus in a multiple pregnancy. The risk of this procedure is higher compared to embryo reduction, since it is performed at a later gestational week (18th–22nd week instead of 10–12th week) [28]. In higher-order gestations, unwanted loss of healthy fetuses is higher than twins (11.2% vs. 2.4%) [29]. It was observed that gestation period was longer in pregnancies without pregnancy loss [30, 31].

## 7. Questions and suggestions about clinic

### 7.1 How to determine chorionicity?

Since fetal risks depend on chorionicity, chorionicity should be determined as early as possible. The ideal period for the determination of chorionicity is late first or early second trimester. In a series, the sensitivity, specificity, and positive and negative predictive values of ultrasound in determining chorionicity before 14 weeks of gestation were 89.8%, 99.5%, 97.8%, and 97.5%, respectively [32], and chorionicity was correctly determined in 95% of cases.

The pregnancy is dichorionic if the ultrasound shows two separate placentas or the gender of fetuses are different. In the case of a single placenta, the most important ultrasound finding used to determine chorionicity is the "twin peak" finding, also known as "lambda" or "delta" sign. This finding shows that there is a triangular shaped protrusion on the chorionic surface of the placenta having the same echogenicity as the placenta and pregnancy is dichorionic [33].

### 7.2 Is there a test to predict spontaneous preterm labor in multiple pregnancies?

In order to determine the risk of spontaneous preterm labor in asymptomatic pregnant women, many screening methods such as measuring cervical canal length with transvaginal ultrasound, examination of the cervix, fetal fibronectin screening, and home uterus monitoring have been tried. These screening methods are not recommended in asymptomatic women because there is no intervention that can prevent preterm labor in multiple pregnancies that are found to be at high risk for preterm labor [34].

In symptomatic pregnant women, the positive predictive value of fetal fibronectin test alone or short cervical length is low and should not be used for the management of acute symptoms [35]. Although observational studies have shown that fetal fibronectin or cervical canal length precludes the use of unnecessary treatment in singleton pregnancies with preterm labor symptoms, these data have not been proven by randomized controlled trials for either singleton or multiple pregnancies [36–40].

### 7.3 Are there any interventions to extend the duration of multiple pregnancy?

There is no evidence that interventions such as prophylactic cerclage, routine hospitalization and bed rest, prophylactic tocolysis, and prophylactic pessary reduce neonatal morbidity and mortality. Hence, their use is not recommended in multiple pregnancy.

#### *7.3.1 Prophylactic cerclage*

The benefit of prophylactic cerclage in a twin or triplet pregnancy without a history of cervical insufficiency has not been shown [41–43]. In addition, prophylactic cerclage has been reported to increase spontaneous preterm labor by twofold in pregnant women with a short cervical canal on ultrasound (RR, 2.2; 95% [CI], 1.2–4.0) [44, 45]. Therefore, cerclage should be avoided in multiple pregnancies.

#### *7.3.2 Routine hospitalization and bed rest*

In a Cochrane review, hospitalization or bed rest has been shown to have no benefit in uncomplicated twin pregnancies [46]. For this reason, routine bed rest should not be recommended to women pregnant with multiples due to the lack of benefit and the risk of thrombosis.

#### *7.3.3 Prophylactic tocolysis*

No tocolytic agent should be used for prophylaxis in multiple pregnancies. Maternal complications from tocolysis, such as pulmonary edema, are more common in multiple pregnancies [47, 48]. There are also no data that these drugs reduce the risk of preterm labor or improve neonatal outcomes [49–51]. Oral betamimetics did not reduce preterm delivery, low birth weight, or neonatal mortality in multiple pregnancies compared to placebo [52]. Oral betamimetics are also associated with maternal and fetal cardiac stress and gestational diabetes [53, 54]. It has recently been demonstrated to be associated with adverse maternal cardiovascular events, including death [55].

#### *7.3.4 Prophylactic pessary*

There is no scientific evidence that prophylactic cervical pessary reduces the frequency of spontaneous preterm labor or perinatal morbidity in multiple

pregnancies. In a recent multicenter randomized controlled study, 813 twin pregnancies from 16 to 20 weeks were randomized [56], and poor perinatal outcome was observed in at least 1 baby of 13% of women treated by Arabin pessary and 14% of other women (RR, 0.98 CI 0.69–1.39). Therefore, the use of prophylactic cervical pessary is not recommended in multiple pregnancies [56].

### 7.4 Does progesterone treatment reduce the risk of preterm labor in multiple pregnancies?

Progesterone treatment is not recommended in multiple pregnancies since it does not decrease the incidence of preterm labor [57–63]. In one study, it was shown that the use of 17α-hydroxyprogesterone caproate did not reduce neonatal morbidity and prolong pregnancy in triplet pregnancies [61]. In another randomized study, it was shown to significantly increase the rates of fetal loss in the second trimester in triplets [60]. In multiple pregnancies that the cervix was found to be short on transvaginal ultrasound, neither 17α-hydroxyprogesterone caproate nor vaginal progesterone has been demonstrated to be beneficial [64–67].

### 7.5 How to manage preterm labor in multiple pregnancies?

#### *7.5.1 Tocolytics*

Calcium channel blockers or nonsteroidal anti-inflammatory drugs are first-line tocolytic agents. Although there are no large-scale randomized studies conducted only with multiple pregnancies, the current scientific data were obtained from studies involving multiple pregnancies as well as singleton pregnancies [68]. Therefore, in case of an acute preterm labor in multiple pregnancies, short-term tocolysis can be administered up to 48 hours to allow for the administration of corticosteroids.

#### *7.5.2 Corticosteroids*

In a Cochrane review, it was concluded that antenatal corticosteroid is beneficial in singleton pregnancies and further studies are required for the outcomes in multiple pregnancies [69]. However, based on its proven benefits in singleton pregnancies, the National Institute of Health recommends the administration of antenatal corticosteroids to pregnant women from 24 to 34 weeks of gestation and who are at risk of giving birth within 7 days, unless there is a contraindication, regardless of the number of fetuses [70, 71].

#### *7.5.3 Magnesium sulfate for fetal neuroprotection*

Magnesium sulfate has been shown to reduce the risk and severity of cerebral palsy, regardless of the number of fetuses, at birth before 32 weeks [72–78].

### 7.6 Prenatal screening in multiple pregnancies

In multiple pregnancies, the probability of one or more fetuses being affected by trisomy is mathematically higher than in singleton pregnancies. For example, maternal age-dependent risk of trisomy in dizygotic twins is twice as much as a singleton pregnancy at the same age [79]. Therefore, the risk of a 33-year-old woman expecting twins is equal to that of a 35-year-old singleton pregnant woman [80].

Aneuploidy screening has many limitations in multiple pregnancies. Serum screening tests in twin or triplet pregnancies are not as sensitive as in singleton pregnancies. The detection rate of trisomy 21 by the second trimester maternal serum screening test in twin pregnancies has been reported to be 63% (71% when both fetuses are affected and 60% when only one is affected) with a false-positive rate of 10.8% [81]. In the first trimester screening test, where maternal age, nuchal transparency, and biochemical markers are evaluated together in twin pregnancies, the detection rate is 75–85% for Down syndrome and 66.7% for trisomy 18, with a false-positive rate of 5% [82–85]. Experience with triplet pregnancies is scarce, but studies show that screening for only nuchal transparency and maternal age is reliable. However, one study has shown that the nuchal transparency above the 95th percentile in monochorionic twin pregnancies predicts 38% of twin-to-twin transfusion syndrome that will develop later, making the interpretation of the first trimester screening results even more complicated in monochorionic pregnancies [86].

Noninvasive prenatal testing can be used for fetal aneuploidy screening, but further data is required to recommend its use in multiple pregnancies [87].

### 7.7 What are the problems encountered in the prenatal diagnosis of aneuploidy in multiple pregnancies?

Women who wish to have a definitive diagnosis of genetic abnormalities may have an amniocentesis and chorionic villus sampling (CVS). The procedure-related risk of miscarriage for both tests is similar (1–1.8%) and slightly higher compared to singleton pregnancies [88–90]. The main advantage of having CVS is that CVS is performed earlier in pregnancy. However, in multiple pregnancies, some technical difficulties are encountered during these procedures. In approximately 1% of multiple pregnancies, sample for CVS was collected from the wrong fetus [91]. This risk is lower in amniocentesis. To avoid the risk of sampling error, indigo carmine is injected into the first sampled sac after amniocentesis. The absence of dye in the fluid from the second sac proves that sampling was done from two different sacs. Due to the low probability of karyotype being discordant in monochorionic twins, pregnant women may prefer karyotype analysis of a single fetus. Thus, the success of ultrasound in determining chorionicity should be explained to pregnant women.

When aneuploidy is diagnosed, if a fetus is affected, the parents are offered several options, such as termination of the entire pregnancy, selective reduction of the affected fetus, or continuation of pregnancy without any intervention.

### 7.8 What is the prognosis of multiple pregnancies that are discordant in terms of the size of the fetuses?

Discordant growth in multiple pregnancies is generally defined as a difference of at least 20% between the estimated fetal weights of two fetuses [92, 93]. This rate is calculated by dividing the difference between the weights of the two fetuses by the weight of the larger fetus. It is controversial whether growth discordance leads to negative outcomes in the absence of structural anomaly, aneuploidy, discordant infection, oligohydramnios, or fetal growth restriction. There are studies showing that fetal or neonatal morbidity and mortality do not increase in cases where weight discordance is present but the weight of both fetuses complies with that gestational week [94–97]. However, in multiple pregnancies where the growth of at least one fetus is limited, major neonatal morbidity increases by 7.7 times [98]. In addition, perinatal mortality and morbidity rates were higher in twins with growth restriction than in singleton pregnancies in the same gestational week [99]. In summary,

although there is no evidence that neonatal morbidity and mortality increase in twins with discordance only, the risk of adverse perinatal outcomes increases in the presence of an abnormal finding such as fetal growth restriction accompanied by discordance.

### 7.9 How to manage the death of a fetus?

In the first trimester, spontaneous reduction occurs in one or more fetuses in many of the multiple pregnancies [100]. This likelihood of reduction is proportional to the number of gestational sacs (36% in twins, 53% in triplets, 65% in quadruplets [101]). In the second or third trimester, the death of one or more fetuses is seen in 5% of twins and 17% of triplets [102]. Chorionicity affects the loss rate and helps determine the prognosis and manage the living fetus. In monochorionic-diamniotic twins, the rate of fetal death is higher than in dichorionic-diamniotic twins [103–105]. In fetal deaths after the 14th week of pregnancy, the probability of death of the other twin is 15% in monochorionic twins and 3% in dichorionic twins [105]. The probability of developing neurological abnormalities in the living fetus is 18% in monochorionic twins and 1% in dichorionic twins [106, 107]. Despite these risks, the immediate delivery of the other twin has no benefit [108]. Therefore, in monochorionic twin pregnancies, if one of the fetuses dies before the 34th gestational week, the pregnancy should be managed according to the mother and the living fetus. Unless there is another indication, delivery should not be done before 34th week [109]. The timing of birth should be determined according to the patient and in consultation with those trained in maternal-fetal medicine.

### 7.10 How to perform antepartum fetal follow-up in dichorionic pregnancies?

After determining chorionicity in the first or early second trimester, the anatomy, size, amount of amniotic fluid, and placenta should be evaluated with ultrasound at 18–22 weeks of gestation. The growth rate of fetuses in uncomplicated twin pregnancies is approximately the same as single pregnancies up to 28–32 weeks [110]. Although there is no scientific evidence suggesting that ultrasound should be performed to evaluate fetal growth after the 20th week, it seems reasonable to monitor dichorionic twin pregnancies without fetal growth restriction or other pregnancy complications every 4–6 weeks with serial ultrasound.

It has not been shown that antepartum tests or umbilical artery Doppler ultrasound improves perinatal outcomes in uncomplicated twin pregnancies [111]. Tests evaluating fetal well-being in dichorionic twins should only be used when there are fetal or maternal complications such as fetal growth restriction.

### 7.11 How to manage complications caused by monochorionic placentation?

Monochorionic pregnancies should be monitored more closely than dichorionic twins because of the higher risk of complications [112]. Monitoring of pregnancy with serial ultrasound every 2 weeks from the 16th week should be considered [113–115].

#### *7.11.1 Twin-to-twin transfusion syndrome*

Twin-to-twin transfusion syndrome develops in approximately 10–15% of monochorionic-diamniotic pregnancies and is due to arteriovenous anastomoses in the monochorionic placenta. It usually occurs in the second trimester and is diagnosed by the presence of oligohydramnios (the largest vertical pocket is smaller

than 2 cm) in one sac and polyhydramnios (the largest vertical pocket is larger than 8 cm) in the other sac. A fetal discordance and selective fetal growth restriction due to structural and genetic anomalies or infectious diseases should be ruled out. The benefits of umbilical artery Doppler have not been demonstrated in cases where there is no growth and fluid discordance. The prognosis of twin-to-twin transfusion syndrome varies by the week of gestation and the severity of the syndrome. Staging is based on the Quintero classification system shown in **Table 1**, and treatment with laser coagulation or amnioreduction therapy is frequently used [112, 116].

*7.11.2 Monoamniotic twins*

The natural incidence of monoamniotic twin pregnancy is one in 10,000, but the incidence may be higher in zona-manipulated IVF pregnancies [117]. Perinatal mortality rates associated with cord complications have been reported as high as 80% [118]. Although the ideal management of these pregnancies is not clearly known, daily fetal heart monitoring in hospital conditions from 24 to 28 weeks of gestation and delivery at 32–34 weeks of gestation are the common practice [118–120].

*7.11.3 Rare complications*

Acardiac twin pregnancy occurs in 1% of monochorionic pregnancies and is characterized with a fetus that does not have a normally developed heart and brain [121]. This fetus continues to live by the anastomoses in the placenta and the blood supplied by the other fetus (pumping twin). Therefore, the pumping fetus is at risk of cardiac insufficiency, and intrauterine or neonatal loss occurs in nearly half of the cases [122]. This rare condition should be managed by a maternal-fetal medicine specialist experienced in twin pregnancy management.

Conjoined twin is a rare phenomenon, occurring 1 in 50,000–100,000 [123]. After the diagnosis, it should be determined which organs are shared for the prognosis [124]. The survival rate of a conjoined twin detected in the intrauterine period is only 18% even after successful surgery [125].

**7.12 What should be the time and mode of delivery in multiple pregnancies?**

The time of spontaneous delivery in twin pregnancies is around 36 weeks, and so the complications of prematurity are an important risk [126]. Perinatal mortality increases again after 38 weeks of gestation [127]. Accordingly the time of delivery for uncomplicated twin pregnancies would be reasonable [108]:

a. At 38 weeks in dichorionic diamniotic twins without complications

b. From 34 to 37 6/7 weeks in monochorionic-diamniotic pregnancies without complications

c. From 32 to 34 weeks in monoamniotic pregnancies without complications

The ideal mode of delivery varies by the type of twin pregnancy, the presentation of the fetuses, the gestational week, and the experience of the delivering physician. Twin pregnancy alone is not an indication of cesarean section [128]. In monoamniotic pregnancies only, cesarean delivery is required to avoid cord complications that may develop in the other fetus during the birth of the first fetus [118].

In a recently published randomized controlled study, no difference was reported between planned cesarean and planned vaginal delivery in terms of fetal and neonatal death or severe neonatal morbidity between 32 and 38 6/7 weeks of gestation in twin pregnancies with cephalic presentation of the first fetus [129]. Therefore, in diamniotic twin pregnancies with cephalic presentation of the first fetus after the 32nd gestational week, vaginal delivery appears to be a logical option, regardless of the presentation of the second fetus, provided that the obstetrician is experienced in internal podalic version and vaginal breech delivery [130].

The ideal delivery method in higher-order multiple pregnancies is not known. In small observational studies, there was no significant difference between planned vaginal delivery and planned cesarean delivery with the cephalic presentation of the first fetus in uncomplicated triplet pregnancies. Therefore, planned vaginal delivery may be considered in these pregnancies if obstetrician is experienced [131–133]. Vaginal delivery can be attempted in twin pregnancies with a previous history of cesarean section with a single lower transverse incision and without any contraindications for vaginal delivery [134–138]. Internal fetal manipulation or emergency cesarean section may be required during delivery. Women with multiple pregnancies are at risk for atony, postpartum bleeding, and emergency hysterectomy [139]. The administration of neuroaxial analgesia facilitates operative vaginal delivery, external or internal cephalic version, and total breech extraction in multiple pregnancies [130].

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|---|
| Stage 1. Monochorionic-diamniotic gestation with oligohydramnios (MVP less than 2 cm) and polyhydramnios (MVP greater than 8 cm) |
| Stage 2. Absent (empty) bladder in donor |
| Stage 3. Abnormal Doppler ultrasonography findings* |
| Stage 4. Hydrops |
| Stage 5. Death of one or both twins |

*Abbreviation: MVP, maximum vertical pocket. Data from [140].*
**Defined as the presence of one or more of the following: umbilical artery absent or reversed diastolic flow; ductus venosus absent or reversed diastolic flow; or umbilical vein pulsatile flow.*

**Table 1.**
*Staging of twin-to-twin transfusion syndrome.*

## 8. Summary of findings and recommendations

**A.** Recommendations based on reliable scientific data (with evidence level A)

- No tocolytic agent is recommended for prophylactic use in multiple pregnancies.
- Treatment with progesterone does not reduce the incidence of spontaneous preterm delivery in twin and triplet pregnancies.

**B.** Recommendations based on limited scientific data (with evidence level B)

- Chorionicity should be determined in the late stages of the first trimester or in the early stages of the second trimester due to complications of monochorionicity.
- Since prophylactic tocolysis, prophylactic cerclage, prophylactic pessary, routine hospitalization, and bed rest have not been shown to reduce neonatal

morbidity and mortality, these practices are not recommended in multiple pregnancies.

- Magnesium sulfate has been shown to reduce the risk and severity of cerebral palsy, regardless of the number of fetuses, at birth before 32 weeks.

- In women with a previous history of cesarean section with a transverse incision to the lower segment, vaginal delivery can be attempted unless there is another contraindication.

- In pregnancies in which the number of fetuses is reduced from three to two with embryo reduction, pregnancy loss, antenatal complications, preterm delivery, low birth weight, and cesarean and neonatal mortality rates are lower than in pregnancies continuing as triplets and are similar to spontaneous twin pregnancies.

- Unless there are contraindications, a cycle of antenatal corticosteroid should be administered to women pregnant with multiples from 24 to 34 weeks of gestation and who are expected to give birth within 7 days regardless of the number of fetuses.

**C.** Recommendations based on expert opinion (with evidence level C)

- Delivery in uncomplicated monoamniotic twins should be at 32–34 weeks of gestation.

- In diamniotic twin pregnancies over 32 0/7 weeks with cephalic presentation of the first fetus, vaginal delivery appears to be a logical option, regardless of the presentation of the second fetus, provided that the obstetrician is experienced in internal podalic version and vaginal breech delivery.

- Women with multiple pregnancies are candidates for routine aneuploidy screening regardless of age.

- Administration of neuroaxial (epidural) analgesia in multiple pregnancies facilitates operative vaginal delivery, external or internal cephalic version, and total breech extraction.

- Monoamniotic twin pregnancies should be delivered by cesarean.

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