

TWIN PREGNANCIES French 2009 Guidelines

CNGOF (National French College in Obstetrics and Gynecology)

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Epidemiology of twin pregnancies

The rate of twin deliveries in 2008 was 15.6 per 1000, an increase of approximately 80% since the beginning of the 1970s. It is estimated that one-quarter to one-third of the increase in twin deliveries in France is attributable to the increase in maternal age over this period and to the development in infertility treatment. Women should thus be informed early enough in their childbearing years of the risks associated with late pregnancy (professional consensus). One of the priorities in the management of infertile couples remains the prevention of twin and higher-order multiple pregnancies (professional consensus). The principal health risks associated with twins involve fetal and infant mortality, preterm delivery, fetal growth restriction and cerebral palsy. The risk of preterm delivery (< 37 weeks) for twins was 44.3% in France in 2003, that is, a relative risk of 8.8 (95% CI 7.8-10.0) compared with singletons. Neither maternal age nor the spontaneous or induced nature of the pregnancy appears to have a significant effect on the excess perinatal risk of twins. Women have an increased risk of mortality and morbidity during multiple pregnancies. It is important for physicians in France to have the best tools for monitoring the health status of twins and their mothers. They must accordingly aid the medical profession and the public health authorities in the analysis of their needs and in the evaluation of medical practices (professional consensus).

Diagnosis of chorionicity

Every report of an ultrasound examination of a twin pregnancy (especially during the first trimester) must include information about chorionicity (professional consensus). It is recommended that chorionicity be diagnosed as early as possible in twin pregnancies, because the earlier the diagnosis, the more reliable it is (professional consensus). If chorionicity cannot be diagnosed during the first trimester, the patient must be referred to a specialist ultrasonographer at an approved prenatal diagnostic center (CPDPN) (professional consensus). The most relevant signs (close to 100%) are the number of gestational sacs

between 7 and 10 weeks and the presence of a lambda sign between 11 and 14 weeks (professional consensus).

If chorionicity was appropriately diagnosed during the first trimester of pregnancy and the "explicit photograph of the ultrasound image allowing diagnosis of chorionicity" can be furnished, this diagnosis is permanent and need not be reconsidered later (professional consensus).

Particularities of aneuploidy screening

It appears legitimate to use the risk estimate tables for aneuploidy established for singletons in everyday practice (professional consensus). In dichorionic pregnancies, this risk is estimated during the first trimester by a calculation that integrates maternal age and the measurement of the crown-rump length (CRL) and of the nuchal fold of each fetus (Grade B). In monochorionic pregnancies, the risk of aneuploidy in the first trimester must be estimated on a risk scale bounded by the values of the thickness of the nuchal fold of each fetus (professional consensus). The routine use of serum markers during the first trimester is not recommended, but their use in twins is currently being assessed (professional consensus). Nor is it recommended to order serum marker tests routinely during the second trimester (the mean sensitivity is associated with a high false-positive rate and the screening test does not provide a separate risk for each fetus) (professional consensus).

Diagnostic sampling in twin pregnancies: Chorionic villus sampling or amniocentesis?

The risk of fetal loss associated with sampling in a twin pregnancy may be slightly higher than that observed for singleton pregnancies (Grade C). In the case of a choice about sampling methods, chorionic villus sampling is recommended over amniocentesis (professional consensus).

Its performance, between 11 and 14 weeks, provides an earlier result than amniocentesis and makes it possible to perform selective pregnancy reduction with less risk (professional consensus).

Sampling from a twin pregnancy must be performed by an operator experienced in taking these samples in multiple pregnancies (professional consensus). When amniocentesis is performed, the choice of inserting one needle or two is left to the operator (professional consensus). Routine sampling of both conceptuses is not always necessary. Nonetheless, parental request justifies it, even in situations where a single sample might otherwise seem sufficient (professional consensus). In chorionic villus sampling, the transabdominal route should be preferred to the cervical (professional consensus).

Monitoring dichorionic diamniotic twin pregnancies

Monthly follow-up by a gynecologist-obstetrician in an appropriate facility is recommended (professional consensus). For mothers with a prepregnancy BMI between 19 and 25, the total recommended weight gain is 16 to 24 kg (Grade B). Current data are insufficient to justify a recommendation for or against systematic screening for pregnancy-related diabetes (professional consensus). A monthly ultrasound examination including an estimation of fetal weight and Doppler umbilical artery velocimetry is recommended (professional consensus). More intensive ultrasound monitoring is advised if the weight discordance between the 2 fetuses exceeds 20-25% (Grade B). Because of the increased risk of obstetrical complications, more intensive follow-up may be set up during the third trimester (professional consensus). It is recommended to plan delivery of uncomplicated dichorionic diamniotic twin pregnancies from 38 weeks and before 40 weeks (Grade C).

Monitoring monochorionic diamniotic twin pregnancies

Because of the increased risk of morbidity and mortality in monochorionic pregnancies and their relative rarity, clinical and ultrasound monitoring should be performed by a physician working in close collaboration with a healthcare facility experienced in the management of these pregnancies and their principal complications (professional consensus). In cases of doubt or complications, the patient should be referred to a prenatal diagnostic center for an opinion (professional consensus). Monthly prenatal consultations and twice-monthly ultrasound are recommended (professional consensus). Threatened preterm delivery requires consideration of specific potential underlying complications (professional consensus). The

optimal term for delivery of an uncomplicated monochorionic pregnancy is lower than the optimal term for delivery of a dichorionic pregnancy. It is reasonable to consider delivery from 36 weeks but before 38 weeks + 6 days, with intensified monitoring during that time (professional consensus).

Where should prenatal care take place and where should twins be born?

Prenatal care of twin pregnancies is not currently well codified in France. It must be performed by a physician with good knowledge of this type of pregnancy (professional consensus). Prenatal care of monochorionic pregnancies must be provided by a physician working in close collaboration with a facility experienced in the management of this type of pregnancy and its complications (professional consensus). Prenatal care of monoamniotic pregnancies must take place in close collaboration with a level III facility (professional consensus). Current data are insufficient to justify a recommendation that "twin clinics" be set up in France for the management of twin pregnancies (professional consensus).

The increased risk of maternal complications and the high rate of medical interventions (cesareans, instrumental operative intervention, and maneuvers) justify the immediate and permanent availability of a gynecologist-obstetrician with experience in the vaginal delivery of twins (professional consensus). The presence of an anesthesiologist is especially recommended during the phase of actual fetal and placental delivery because of the increased risk of hemorrhage. It is recommended that the maternity ward where delivery takes place have rapid access to blood products (professional consensus). The immediate and permanent availability of a pediatric team appropriate in size and resuscitation skills to the number of newborns and the extent of their prematurity is recommended (professional consensus). Twins may be delivered in maternity units that meet these specifications (professional consensus).

Prevention of spontaneous preterm delivery in asymptomatic twin pregnancies

Neither tocography nor screening for bacterial vaginosis allows the identification of a population at risk of preterm delivery (respectively Grade B and C).

Current data in the literature are contradictory and insufficient to determine whether the results of either testing for fetal fibronectin in cervicovaginal secretions or digital cervical examination are predictive of preterm delivery (professional consensus).

Only obstetric history (history of preterm delivery) (Grade C) and especially transvaginal ultrasound measurement of cervical length (Grade B) are predictive factors for preterm delivery. Nonetheless, no study has shown that the identification by transvaginal ultrasound of a group at risk of preterm delivery makes it possible to reduce the frequency of such deliveries in asymptomatic patients carrying twins (professional consensus). If transvaginal ultrasound is performed, information about a long cervix (> 30 mm) is more pertinent than that of a shortened cervix (< 25 mm) (professional consensus). Preterm delivery rates have not been reduced by any of the following interventions: strict bedrest, use of prophylactic oral tocolytics, administration of progesterone, or prophylactic cerclage in patients with or without cervical modifications (Grade A).

Management of twin-twin transfusion syndrome (TTTS)

It is important to recognize signs of TTTS early to improve the management of these pregnancies (professional consensus). It is therefore important to look in monochorionic pregnancies for discordance in amniotic fluid (smaller sac < 2 cm and larger sac > 8 cm or > 10 cm respectively ≤ 20 weeks or > 20 weeks) and/or discordance in bladder size (professional consensus). Twice-monthly ultrasound monitoring, sometimes even weekly, is recommended for this type of pregnancy because of the risk of complications (professional consensus). TTTS is an obstetric emergency that is easy to diagnose with ultrasound. Treatment and counseling must be performed in a center that can offer fetoscopic laser coagulation of placental anastomoses (professional consensus). This laser treatment is the first-line treatment (Grade B). Monitoring after treatment should be conducted in association with the reference center (professional consensus). In the absence of complications after laser treatment, planned delivery is recommended from 34 weeks and no later than 37 weeks (professional consensus).

Monochorionic monoamniotic pregnancies

This type of twin pregnancy is associated with high mortality due to the almost routine presence of cord entanglement. Obstetric monitoring must be intensified at 27-30 weeks (professional consensus). It can be performed on an inpatient or outpatient basis at a level III maternity ward (professional consensus). Delivery as early as 32 weeks and before 36 weeks is recommended (professional consensus). Cesarean delivery is highly recommended (professional consensus).

Conflicts of interest between twins

The incidence of malformations in dichorionic and monochorionic pregnancies is respectively double and triple that in singleton pregnancies. They should be managed at a prenatal diagnostic center (professional consensus). In the case of an especially severe malformation in a dichorionic twin, selective pregnancy reduction is possible and does not present a direct risk to the healthy twin (professional consensus). The risk of fetal loss is approximately 8% and that of very preterm birth (25-32 weeks) around 12% (Grade C). In the case of an especially severe malformation of a twin in a monochorionic pregnancy, umbilical cord occlusion with bipolar forceps is an alternative treatment. In the absence of imminent risk for the healthy twin, this procedure is recommended at or after 18 weeks (Grade C), to be performed by an operator experienced in this technique (professional consensus). The risk of premature rupture of the membranes is approximately 20% and survival for the second twin around 80%. The woman's active participation in the choice of treatment is essential (professional consensus).

Management of a twin pregnancy, after in utero death

The neonatal mortality rate in twins is up to 7 times higher than in singletons and affects approximately 5% of all twin pregnancies. In the case of dichorionic pregnancy, the absence of vascular interaction between the twins means that the death of one twin should not have any consequences to the survivor. The risks of fetal death and neurologic abnormalities of the surviving twin are estimated at 4% and 1% respectively. The principal risk is preterm delivery. In the case of monochorionic pregnancy, anastomoses on the chorionic plate will lead to morbidity and perhaps death of the co-twin. The risks of fetal death and neurologic abnormalities of the surviving twin are estimated at 12% and 18% respectively, with an increased risk of preterm delivery. A possible cerebral lesion (associated with hypovolemic

shock) can generally be detected only 3 weeks to a month after the death of the other twin. Ultrasound evaluation and fetal cerebral MRI are recommended to look for these cerebral lesions in survivors (professional consensus). Early delivery in the hours or days after the death is not recommended, because it cannot in any case prevent the potential cerebral lesions (professional consensus). If the patient has not given birth spontaneously, induction should be proposed at 39 weeks at the latest (professional consensus). Psychological counseling is recommended at the death of a twin (professional consensus).

What kind of delivery is best for twins?

The patient should receive thorough information about the risks of vaginal and cesarean deliveries (professional consensus). It is desirable for women with a twin pregnancy to have epidural analgesia (professional consensus). The studies about the question of mode of delivery have methodological limitations and lack power. Vaginal delivery should be performed by an obstetrician with experience in the vaginal delivery of twins (professional consensus).

There is no reason to recommend one type of delivery rather than another in twin pregnancies, regardless of gestational age at birth (Grade C). In particular, there is no reason to recommend one type of delivery rather than another:

- in a twin pregnancy, with T1 in cephalic presentation near term (Grade B),
- in a twin pregnancy, with T1 in breech presentation near term (Grade B),
- in a twin pregnancy, in women with uterine scars (Grade C),
- in a twin pregnancy, with T1 in cephalic or breech presentation in women with preterm labor (Grade C).

Delivery of the second twin

Active management of the delivery of the second twin is recommended to reduce the interval between the birth of the 2 twins (Grade C), because this interval is associated with:

- progressive degradation of neonatal acid-base indicators (Grade C),
- increase in the number of cesareans for the second twin (Grade C),
- neonatal morbidity of the second twin (Grade C).

In the case of noncephalic presentation, total breech extraction, preceded by internal version maneuvers if the twin's position is transverse, is associated with the lowest cesarean rates for second twins (Grade C). In these situations, external cephalic version may be harmful (Grade C). In the case of high and not yet engaged cephalic presentation and if the team is appropriately trained, version by internal maneuvers followed by total breech extraction is to be preferred to a combination of resumption of pushing, oxytocin perfusion, and artificial rupture of the membranes, because the former strategy appears to be associated with fewer cesareans for the second twin (Grade C). In the case of an engaged cephalic presentation, management should involve resumption of pushing, oxytocin perfusion, and artificial rupture of the membranes (Grade C). Obstetric maneuvers of the second twin should be practiced as first-line treatment with intact membranes (professional consensus).