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FIGO COMMITTEE REPORT

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Good clinical practice advice: Role of ultrasound in the management of twin pregnancy☆

FIGO Working Group on Good Clinical Practice in Maternal–Fetal Medicine*,[a]

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PREMISE

Twins represent 2%–3% of live births, but 20% of admissions to neonatal intensive care units.[1] Major congenital abnormalities are 2–4-fold more prevalent in twin pregnancies than in singleton pregnancies, and only 50% of spontaneous twin pregnancies that are identified in the first trimester will result in two live-born infants.[1] Roughly 10% of twin births take place before 32 weeks of gestation and prematurity accounts for 65% of neonatal deaths among multiple births. Chorionicity is the main determinant of perinatal outcome and monochorionicity is associated with a 6-fold higher risk of fetal and perinatal loss.[2,3] Prematurity and intrauterine growth restriction are complications shared by both monochorionic and dichorionic twin pregnancies.[2,3] The presence of anastomoses between two umbilical circulations on the chorionic plate is associated with specific complications, including twin-to-twin transfusion syndrome, selective growth restriction in one twin, and twin anemia polycythemia sequence.[4] Additionally, twins are usually (80%) discordant for fetal malformations and the prevalence of fetal malformations is 4-fold higher in monochorionic twins.[5,6] These include the twin reversed arterial perfusion sequence. Early recognition of the complications listed above is the main aim of the heightened fetal surveillance by ultrasound proposed in twin pregnancies, which should be planned accordingly with chorionicity.[5,6]

Women with multiple pregnancies have an increased risk of spontaneous abortion, anemia, hypertensive disorders, hemorrhage, operative delivery, and postnatal illness.[7,8] The risk of pre-eclampsia for women with twin pregnancies is almost three times that for singleton pregnancies, while the risk for triplet pregnancies is increased 9-fold. In general, maternal mortality associated with multiple births is 2.5 times that for singleton births. Maternal age is an important determinant of perinatal and peripartum morbidity as is the mode of conception, especially with the increasing proportion of multiple pregnancies achieved after oocyte donation.[7,8]

FIGO RECOMMENDS THE FOLLOWING

Critical steps are driven by prenatal ultrasound in the management of multiple pregnancies and include:

1. Determination of chorionicity

   The assessment of chorionicity is easier in the first trimester than in later pregnancy, it is therefore important to assess and document chorionicity clearly at this gestational age. There is benefit in identifying women with monochorionic pregnancies because they will require additional fetal surveillance for specific complications.
2. Establish due date early

   Pregnancy dating is best done in the first trimester using the crown–rump length. The crown–rump length measured before 14 weeks can predict the due date with 5–7 days of accuracy. However, for twins conceived by in-vitro fertilization, the due date should be calculated from the age of the embryo and date of transfer. Correct dating is important because uncomplicated dichorionic twins benefit from being delivered at 37–38 weeks, monochorionic twins at 36 weeks, and monoamniotic twins at 34 weeks.
3. Plan antenatal surveillance in experienced units. These usually offer both medical and psychosocial support.

   3.1. Monochorionic pregnancies

   Fortnightly surveillance including ultrasound examination for:
   - Fetal growth assessment.
   - Doppler examination of umbilical arteries, middle cerebral arteries, ductus venosus.
   - Amniotic fluid volume in each sac using the deepest vertical pocket measurement.

   Discordance in growth, amniotic fluid, and Doppler measurement of peak systolic velocities in the middle cerebral artery should be sought at each examination to identify selective growth restriction, twin-to-twin transfusion syndrome, and twin anemia polycythemia sequence, respectively. Prompt referral to a reference fetal

medicine center should be made if any of the above complications is suspected.

3.2. Dichorionic pregnancies

Monthly surveillance including ultrasound examination for:

- Fetal growth assessment and to quantify growth discordance.
- Doppler examination of umbilical arteries, middle cerebral arteries, ductus venosus.

3.3. Only previous history and cervical length are predictive and relevant for predicting the risk of prematurity. Measurement of cervical length by transvaginal ultrasound should be considered.

4. Prenatal screening and diagnosis of fetal abnormalities should be performed in specialized units.
5. Delivery should be planned in units able to handle perinatal care of twins accordingly with gestational age and birth weight. This includes availability of experienced obstetric anesthesiology and neonatal personnel 24/7.

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CONFLICTS OF INTEREST

The authors have no conflicts of interest.

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