

ANTENATAL MANAGEMENT IN TWIN PREGNANCY

ANTENATAL MANAGEMENT COURSE
ANKARA, TURKEY

- The rate of multiple births is increased because of the use of fertility treatments and older maternal age. Twins and triplets naturally occur in approximately 1 in 80 and 1 in 8000 pregnancies, respectively.
- Multiple births can be dizygotic (resulting from the fertilization of two separate ova), or monozygotic (resulting from a single fertilized egg that subsequently divides into two separate individuals).
- Monozygotic multiple births have an increased perinatal rate due to cord entanglement and twin-twin transfusion.

- **The most serious risk of multiple gestations is spontaneous preterm delivery. The risk of prematurity increases as the fetal number increases**
- **Other adverse effects of multiple births include intrauterine growth restriction resulting in small for gestational age infants, discordant growth (which is associated with an increased risk of fetal death, and neonatal mortality and morbidity), and twin-twin transfusion**

- **Mortality rates of infants are higher in multiple than singleton pregnancies due to increased rates of prematurity, growth abnormalities, obstetric complications, and congenital anomalies (eg, conjoined twins).**
- **The risk of cerebral palsy is increased among infants of multiple births compared with those from singleton births.**
- **Multiple births have a significant financial and psychosocial impact on families**

- Routine ultrasound examination performed in the first or second trimester is the best method to ensure the timely diagnosis of a twin pregnancy and establish gestational age
- Chorionicity should be determined early in gestation. This information affects pregnancy management and is crucial before fetal reduction.
- Monochorionic (MC) twins have a significantly higher risk of adverse perinatal outcome than dichorionic (DC) twins.
- They are also at risk for unique pregnancy complications (twin-twin transfusion syndrome, twin anemia-polycythemia sequence, twin reversed arterial perfusion sequence, selective intrauterine growth restriction) TTTS-TAPS-TRAP
- Monozygotic twins are at higher risk of congenital anomalies than dizygotic twins or singletons

- Twins typically weigh less than singletons of the same gestational age, but their weights usually remain within the range considered to be normal
- Abnormal growth is more common than in singleton pregnancy and can be defined in either of two ways:
 - EFW below the 10th percentile using singleton growth curves, or
 - Presence of ≥ 20 percent discordance in estimated fetal weight between the lighter and heavier twin

- The monitoring of monochorionic twin pregnancies should include assessment of amniotic fluid volume and fetal bladder in both twins for early detection of twin-twin transfusion syndrome and measurement of MCAPSV in both fetuses for early detection of twin anemia-polycythemia sequence. (TAPS)
- There are inadequate data to determine the optimal frequency of monitoring, but ultrasound assessment every two to three weeks after 16 weeks is reasonable.

- In dichorionic twin pregnancies, perform an ultrasound examination every four to six weeks after 20 weeks of gestation as fetal growth deceleration leading to discordancy is optimally detected between 20 and 28 weeks of gestation
- Antepartum fetal testing is indicated in complicated twin pregnancies.
- There is no proven benefit of routine use of antepartum testing (nonstress tests), biophysical profile, amniotic fluid volume determination, or Doppler velocimetry in uncomplicated twin pregnancies.

- **Single fetal death after 20 weeks of gestation occurs in about 5 percent of twin pregnancies. Because of the presence of placental vascular anastomoses between MC twins, the intrauterine death of one twin in an MC pregnancy can cause acute hypotension, anemia, and ischemia in its cotwin, resulting in morbidity or death of the cotwin.**
- **For this reason, if fetal assessment after 26 weeks of gestation suggests impending death of one twin, suggest prompt delivery of MC twins rather than expectant management**

Preterm Labor & Delivery

- **No intervention has been proven to decrease the risk of preterm birth**

- Suggest avoiding elective delivery of dichorionic/diamniotic twins prior to 37 weeks or after 40 weeks of gestation . Suggest delivery of monochorionic/diamniotic twins at 36 to 37 weeks of gestation
- For vertex-vertex twins, suggest vaginal delivery in the absence of standard indications for cesarean delivery
- When the first twin is not in vertex presentation, suggest cesarean delivery

- For vertex-nonvertex twins, suggest breech extraction of the second twin only if the obstetrician has the requisite experience and if the patient provides informed consent
- Available data are reassuring that outcomes in women with twins attempting vaginal birth after a previous cesarean delivery are similar to those with singletons undergoing a trial of labor.
- However, these data are insufficient to definitively establish that uterine rupture rates are comparable

- **Oxytocin for augmentation or induction of labor appears to be effective in twin gestations; there are inadequate data to establish the safety of this intervention.**
- **Perform continuous electronic fetal monitoring of both fetuses during labor .**
- **Suggest epidural analgesia/anesthesia during labor**

- **After delivery of the first twin, the heart rate and position of the second twin should be evaluated using ultrasound and electronic fetal monitoring. As long as the fetal heart rate tracing is reassuring, there is no duration of elapsed time from delivery of the first twin that necessitates intervention to deliver the second twin. Six to 25 percent of second twins will be delivered by cesarean after vaginal delivery of the first twin**

Determining gestational age and chorionicity

- Offer women with twin pregnancies a first trimester ultrasound scan when crown–rump length measures from 45 mm to 84 mm (at approximately 11 weeks 0 days to 13 weeks 6 days) to estimate gestational age, determine chorionicity and screen for Down's syndrome
- Determine chorionicity at the time of detecting twin pregnancies by ultrasound using the number of placental masses, the lambda or T-sign and membrane thickness.
- Assign nomenclature to babies (for example, upper and lower, or left and right) in twin pregnancies and document this clearly in the woman's notes to ensure consistency throughout pregnancy.

Specialist care

- **Clinical care for women with twin pregnancies should be provided by a nominated multidisciplinary team consisting of:**
 - a core team of named specialist obstetricians, specialist midwives, all of whom have experience and knowledge of managing twin pregnancies
 - an enhanced team for referrals, which should include:
 - a perinatal mental health professional
 - a women's health physiotherapist
 - an infant feeding specialist
 - a dietitian.

Members of the enhanced team should have experience and knowledge relevant to twin pregnancies.

- **Coordinate clinical care for women with twin pregnancies to:**
 - minimise the number of hospital visits
 - provide care as close to the woman's home as possible
 - provide continuity of care within and between hospitals and the community.

Specialist care (continued)

- **The core team should offer information and emotional support specific to twin pregnancies at their first contact with the woman and provide ongoing opportunities for further discussion and advice including:**
 - antenatal and postnatal mental health and wellbeing
 - antenatal nutrition
 - the risks, symptoms and signs of preterm labour and the potential need for corticosteroids for fetal lung maturation
 - likely timing and possible modes of delivery
 - breastfeeding
 - parenting..

Monitoring for intrauterine growth restriction

- **Estimate fetal weight discordance using two or more biometric parameters at each ultrasound scan from 20 weeks.**
- **Aim to undertake scans at intervals of less than 28 days.**
- **Consider a 20% or greater difference in size between twins as a clinically important indicator of intrauterine growth restriction and offer referral to a tertiary level fetal medicine centre.**

Indications for referral to a tertiary level fetal medicine centre

- **Seek a consultant opinion from a tertiary level fetal medicine centre for:**
 - monochorionic monoamniotic twin pregnancies
 - monochorionic diamniotic twin pregnancies
 - pregnancies complicated by any of the following:
 - discordant fetal growth
 - fetal anomaly
 - discordant fetal death
 - feto-fetal transfusion syndrome

Timing of birth

- **Offer women with uncomplicated:**
 - **monochorionic twin pregnancies elective birth from 36 weeks 0 days, after a course of antenatal corticosteroids has been offered**
 - **dichorionic twin pregnancies elective birth from 37 weeks 0 days**

Determining gestational age and chorionicity

Early scan for confirmed multiple pregnancy

- Aim to determine all of the following in the same first trimester scan when CRL measures from 45 mm to 84 mm (at approximately 11 weeks 0 days to 13 weeks 6 days):
 - gestational age
 - chorionicity and
 - the risk of Down's syndrome .
- Assign nomenclature to the babies (for example, upper and lower, or left and right) and document.
- Use the largest baby to measure gestational age.

Chorionicity

- Determine when multiple pregnancy is detected using:
 - the number of placental masses and/or
 - the lambda or T-sign and/or
 - membrane thickness.
- For women presenting after 14 weeks 0 days, use all of the above features **and** discordant fetal sex.
- Do not use 3-D ultrasound scans to determine chorionicity.

Problems determining chorionicity

- If transabdominal views are poor because of a retroverted uterus or high BMI, use transvaginal ultrasound.
- If it is not possible to determine chorionicity when detecting the multiple pregnancy, seek a second opinion from a senior ultrasonographer or refer to a healthcare professional competent in determining chorionicity by ultrasound as soon as possible.
- If it is still difficult after referral, manage as monochorionic until proved otherwise

Indications for referral

Seek a consultant opinion from a tertiary level fetal medicine centre for:
monochorionic monoamniotic twin pregnancies

Schedule of specialist antenatal appointments

- Weeks 6 to 19

Type of pregnancy	6	7	8	9	10	11	12	13	14	15	16	17	18	19		
													Anomaly scan (18+0 to 20+6 weeks)**			
Monochorionic diamniotic twins	Booking appt by 10 weeks*					Appt + early scan (approximately 11+0 to 13+6 weeks)						Appt/scan FFTS			Appt/scan FFTS	
Dichorionic twins												Appt only (no scan)				
Monochorionic & dichorionic triplets (triamniotic)												Appt/scan FFTS			Appt/scan FFTS	
Trichorionic triamniotic triplets												Appt only (no scan)				

Schedule of specialist antenatal appointments

- Weeks 20 to 29

Type of pregnancy	20	21	22	23	24	25	26	27	28	29
	Anomaly scan (18 ⁺⁰ to 20 ⁺⁶ weeks)									
	Screen for IUGR at each scan from 20 weeks									
Monochorionic diamniotic twins	Appt/scan FFTS		Appt/scan FFTS		Appt/Scan FFTS				Appt/scan	
Dichorionic twins	Appt/scan				Appt/scan				Appt/scan	
Monochorionic triamniotic & dichorionic triamniotic triplets	Appt/scan FFTS		Appt/scan FFTS		Appt/scan FFTS		Appt/scan		Appt/scan	
Trichorionic triamniotic triplets	Appt/scan				Appt/scan				Appt/scan	

Schedule of specialist antenatal appointments

- Weeks 30 to 37

Type of pregnancy	30	31	32	33	34	35	36	37
	Screen for IUGR at each scan from 20 weeks							
Monochorionic diamniotic twins			Appt/ scan		Appt/ scan		Offer birth If declined: weekly appts + scans	
Dichorionic twins			Appt/ scan		Appt only (no scan)		Appt/scan	Offer birth If declined: weekly appts + scans
Monochorionic triamniotic & dichorionic triamniotic triplets	Appt/ scan		Appt/ scan		Appt/ scan	Offer birth If declined: weekly appts + scans		
Trichorionic triamniotic triplets			Appt/ scan		Appt/ scan	Offer birth If declined: weekly appts + scans		

Structural abnormalities (such as cardiac abnormalities)

- Offer screening as in routine antenatal care.
- Consider scheduling scans slightly later and be aware that they will take longer.
- Allow 45 minutes for the anomaly scan and 30 minutes for growth scans.

Feto-fetal transfusion syndrome (monochorionic pregnancies only)

- **Do not monitor for feto-fetal transfusion syndrome (FFTS) in the first trimester.**
- **Monitor with ultrasound (including to identify membrane folding) from 16 weeks. Repeat until 24 weeks.**
- **If membrane folding or other possible signs (pregnancies with intertwined membrane infolding and amniotic fluid discordance) are found, monitor weekly to allow time to intervene if needed..**

Preterm birth

Predicting the risk of preterm birth

- Be aware that women with twin pregnancies have a higher risk of spontaneous preterm birth if they have had a spontaneous preterm birth in a previous single pregnancy.
- Do not use cervical length (with or without fetal fibronectin) routinely to predict the risk of preterm birth
- Do not use the following to predict the risk of preterm birth:
 - fetal fibronectin testing alone
 - home uterine activity monitoring.

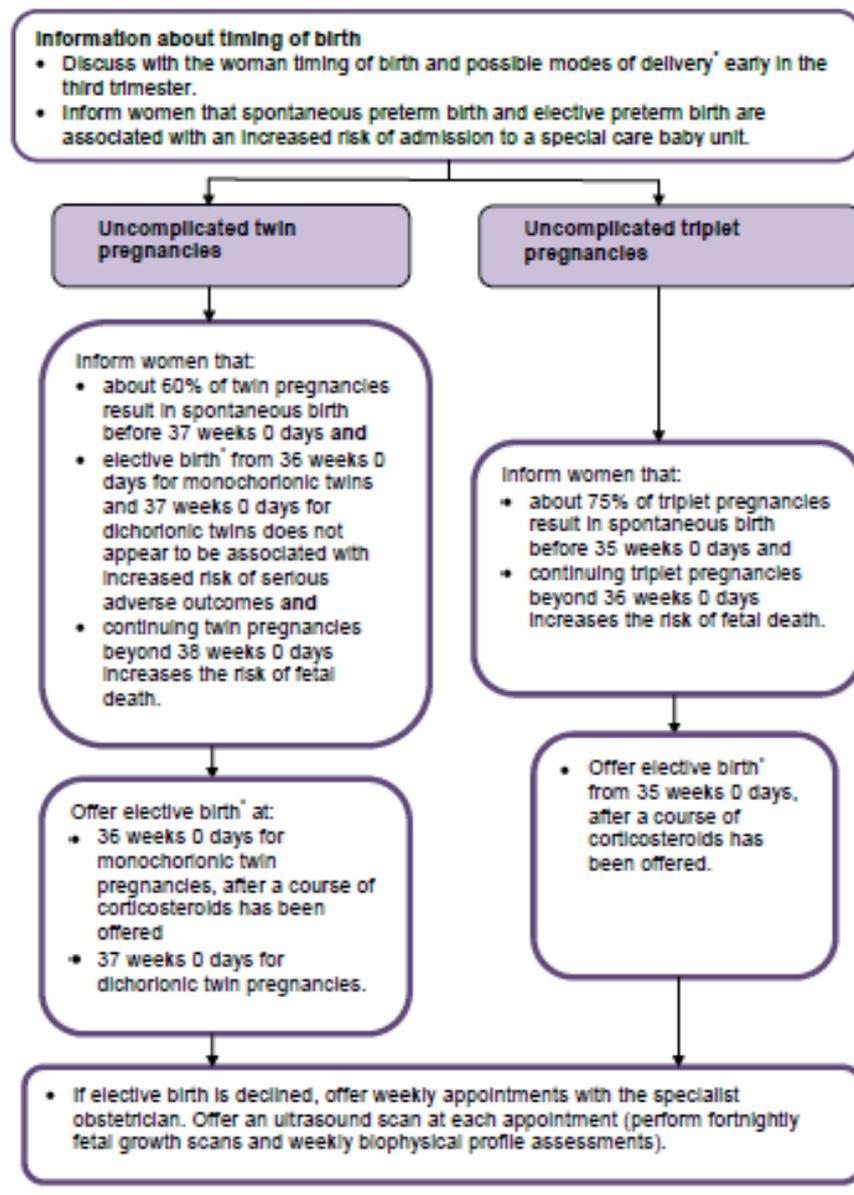
Preventing preterm birth

- Do not use the following (alone or in combination) routinely to prevent spontaneous preterm birth:
 - bed rest at home or in hospital
 - intramuscular or vaginal progesterone
 - cervical cerclage
 - oral tocolytics.

Untargeted corticosteroids

- Inform women:
 - of their increased risk of preterm birth
 - about the benefits of targeted corticosteroids
 - that there is no benefit in using untargeted administration of corticosteroids.
- Do not use single or multiple untargeted (routine) courses of corticosteroids.

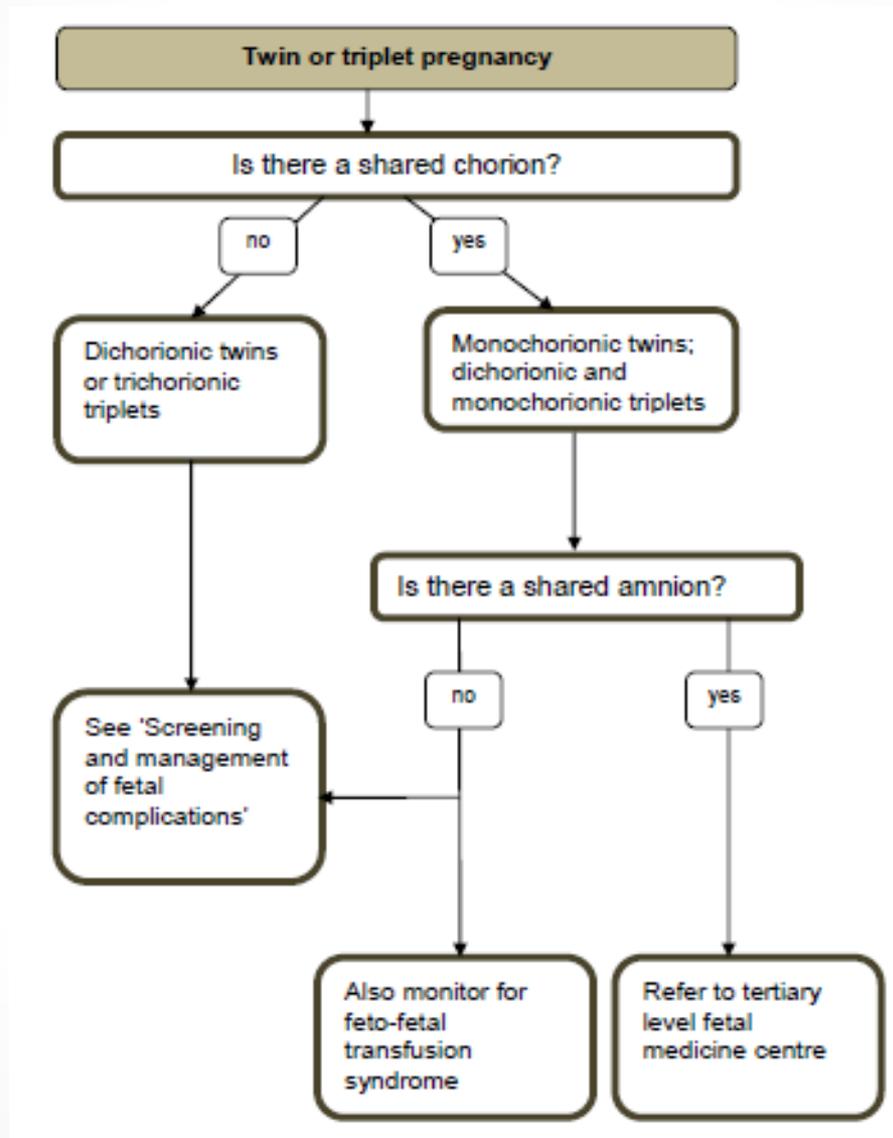
Timing of birth



Questions and Discussions

THANK YOU FOR YOUR TIME AND ATTENTION

Planning care according to chorionicity



Screening for Down's syndrome

- Before screening, inform women about the:
 - greater likelihood of Down's syndrome in twin and triplet pregnancies
 - different options for screening*
 - higher false positive rate of screening tests in twin and triplet pregnancies
 - greater likelihood of being offered invasive testing and of complications occurring from this testing
 - physical and psychological risks related to selective fetal reduction.
- Carry out screening when crown–rump length measures from 45 mm to 84 mm (at approximately 11 weeks 0 days to 13 weeks 6 days)
- Map fetal positions
- Calculate risk per pregnancy in monochorionic pregnancies and for each baby in dichorionic and trichorionic pregnancies.

*See 'Antenatal care' (NICE clinical guideline 62). Available from www.nice.org.uk/guidance/CG62

Twin pregnancies

- Use the 'combined test'.
- Consider second trimester serum screening if woman books too late for first trimester screening. Explain the potential problems (particularly the increased likelihood of pregnancy loss associated with double invasive testing because the risk cannot be calculated separately for each baby).

Triplet pregnancies

- Use nuchal translucency and maternal age.
- Do not use second trimester serum screening.

Indication for referral

Offer women whose risk of Down's syndrome exceeds 1:150 (as defined by the NHs Fetal Anomaly Screening programme [FASP][†]) referral to a fetal medicine specialist in a tertiary level fetal medicine centre.

[†]See <http://fetalanomaly.screening.nhs.uk/standardsandpolicies>

Intrauterine growth restriction

- **Estimate fetal weight discordance using two or more biometric parameters at each scan from 20 weeks. Do not scan more than 28 days apart. Consider a $\geq 20\%$ difference in size as clinically important and refer woman to a tertiary level fetal medicine centre.**
- **Do not use:**
 - abdominal palpation or symphysis–fundal height measurements to predict intrauterine growth restriction
 - Just umbilical artery Doppler ultrasound to monitor for intrauterine growth restriction or birthweight differences.