

# Multiple Pregnancy

## Epidemiology

- The incidence of non-identical twins ranges from 54/1000 in Nigeria to 4/1000 in Japan.
- The incidence of identical twins remains constant at around 3/1000 worldwide.
- In the UK the incidence is 12/1000 and is rising due to IVF and ovulation induction treatment (clomifene)

## Types

**Zygoty** = refers to whether the twins have come from the same ovum or from different ova.

**Monozygous**: Monozygotic twins (identical twins) are the result of the fertilisation of a single egg that divides to create two separate foetuses. They are of the same sex and genetically identical with any differences in their appearance due to environmental influences

- Monochorionic Monoamniotic (MCMA) Twin Pregnancy: The egg splits after 8–12 days, producing 1 amnion and 1 chorion attached to a single placenta
- Monochorionic Diamniotic (MCDA) Twin Pregnancy: The egg splits after 4–7 days, producing 1 amnion and 2 chorions attached to a single placenta
- Dichorionic Diamniotic (DCDA) Twin Pregnancy: The eggs splits after 3 days, producing 2 amnions and 2 chorions attached to a single placenta

**Dizygotic**: Dizygotic twins (fraternal twins) are the result of the simultaneous fertilisation of two separate eggs. They may be of different sexes and are no more alike than ordinary siblings

**Amnionity** = The amnion is the inner embryonic membrane that surrounds the embryo

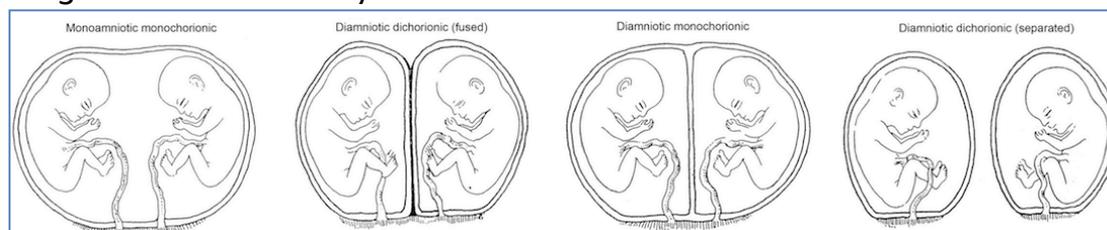
**Chorionity** = the number of placentae present

The chorion is the outer embryonic membrane that surrounds the embryo. Chorionity refers to the number of chorionic membranes present in the womb.

- Monochorionic – Foetuses develop within the same chorionic membrane. Two thirds of monozygotic twins are monochorionic
- Dichorionic – Foetuses develop within separate chorionic membranes. One third of monozygotic twins and all zygotic twins are dichorionic

Chorionicity rather than zygosity is a better determinant of perinatal outcome in twins. The perinatal mortality rate of mono chorionic pregnancies are up to four times higher than dichorionic pregnancies.

Diagram of chorionicity:



## Presentation

### First Trimester

- Hyperemesis – Persistent vomiting during pregnancy due to increased  $\beta$ -hCG (human chorionic gonadotropin)
- Ultrasound – Incidental finding

### Second/Third Trimester

- Pregnancy Size – Large size for dates
- Examination – Multiple foetal parts on examination

## Maternal complications

- Anaemia: there is a slight increase in the incidence of anaemia – this might require routine supplementation with iron and folate
- Antepartum haemorrhage: placenta praevia is commoner with multiple gestation.
- Pre-eclampsia: the incidence of pre-eclampsia is 3 to 4 times greater than that of singleton pregnancies, it tends to develop earlier and may be more severe.
- Surgical delivery
- Gestational diabetes

## Fetal complications

- Structural defects: the incidence is greater with monochorionic twins. Characteristic abnormalities include hydrocephalus, gastrointestinal atresia and cardiac defects. The abnormalities are normally confined to one twin – selective termination is only possible in dichorionic pregnancies at 16–20 weeks, but carries a risk of miscarriage of both twins.
- Polyhydramnios – Excess of amniotic fluid in the amniotic sac. It is associated with multiple pregnancy, maternal diabetes and any anomaly causing impaired swallowing or placental abnormality
- Intrauterine Growth Retardation (IUGR) – Failure of a foetus to achieve its growth potential resulting in the birth of a baby whose birth weight is abnormally low in relation to its

gestational age. It is at or below the 10th weight percentile for its age

- Discordant Growth – Significant birth weight difference between twins or other multiples. The weight difference must be at least 15%
- Prematurity
- Foetal Death – A twin can ‘vanish’ where there is a first trimester death

### **Risk of monochorionic twins**

Twin-to-Twin Transfusion Syndrome – A condition in which communicating vessels in the shared placenta of monochorionic twins divert blood to one foetus (recipient) from the other foetus (donor), resulting in one foetus with increased blood volume and the other foetus being anaemic. It complicates 15% of monochorionic twin pregnancies. It is identified on ultrasound. It is associated with a high perinatal mortality rate. There is significant morbidity and poor neurodevelopment outcome in surviving infants due to complications of the disease and the associated high preterm birth rate. Treatments include amnioreduction (removal of amniotic fluid) and laser ablation of the communicating vessels.

## **Management**

### **Antenatal interventions**

Supplements:

- Folic Acid
- Iron

Monitor:

- Blood Pressure (increased risk of eclampsia)
- FBC (increased risk of anaemia)
- Glucose Tolerance Test (é risk of diabetes)

Ultrasound

- 18 week scan of growth discrepancy, with or without fetal abnormality screening if the patient wishes.
- 24 weeks for growth
- Every 2–4 weeks thereafter depending on chorionicity for growth measurements, and more frequently if there is a significant size discordance.

### **Labour**

Twins are usually induced at 38 weeks, although many will deliver spontaneously before that. Fetal distress is more common in multiple pregnancy so continuous CTG monitoring is needed.

### **Vaginal delivery**

Indications:

- The leading twin must be cephalic (i.e. the head enters the pelvis first)– the delivery requires continuous monitoring and active management of the third stage.

### **Caesarean Delivery**

#### Indications:

- Foetal distress of either twin
- Higher order births
- Monoamniotic twins
- Non–vertex presentation of 1st twin
- Delayed delivery of 2nd twin
- Malpresentation of 2nd twin after delivery of 1st twin (i.e. breech presentation). External or internal cephalic version may be attempted prior to caesarean section (i.e. a breech baby is turned from foot first to head first).

#### Intrapartum risks:

- malpresentation, cord prolapse, fetal hypoxia in second twin, postpartum haemorrhage.

#### References

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