

# MULTIFETAL PREGNANCY: EARLY DIAGNOSIS AND MANAGEMENT

**Dr. dr. Efendi Lukas, Sp.OG(K)**

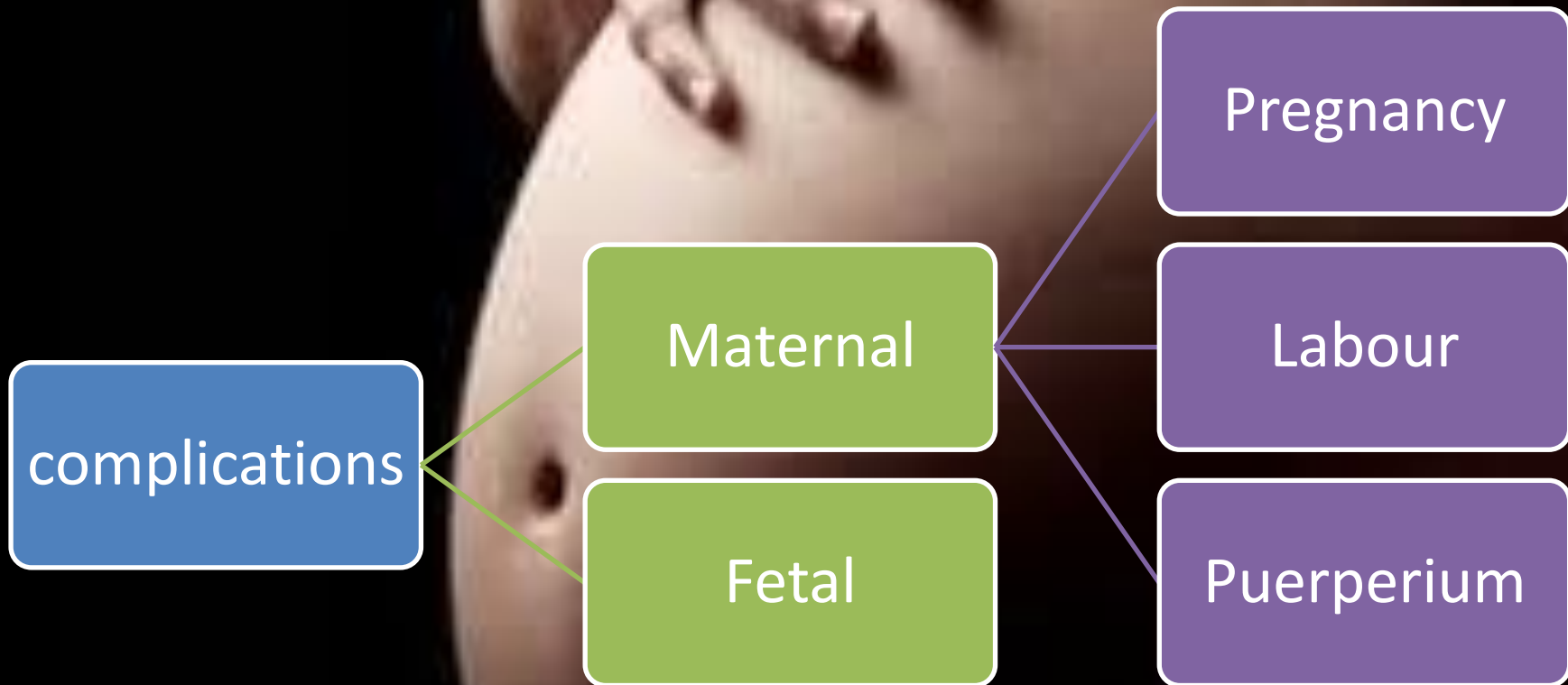
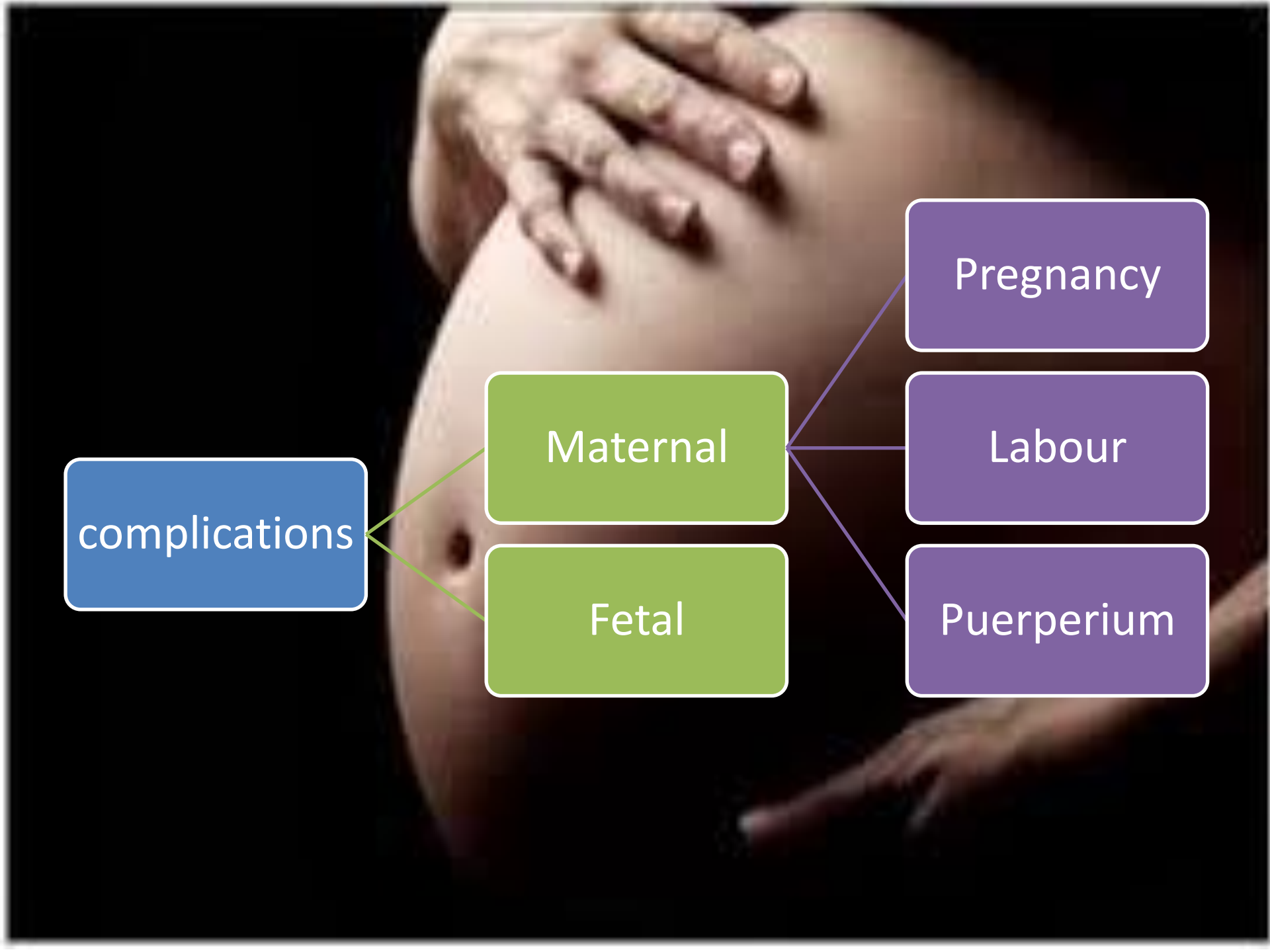
**Divisi Fetomaternal, Departemen Obgin FK**

**UNHAS/ RS Dr.Wahidin Sudirohusodo**

**Makassar**

Is it good NEWS to be told that you are going to have twins?





# Content

1. Overview
2. Determining chorionicity and planning care
3. Problem specific to monochorionic and monoamniotic twins
4. Recommendations for multifetal pregnancy



- Incidence of spontaneous

twins :1 in 80 pregnancies  
8,000 pregnancies

triplets: 1 in

- Incidence of

Monozygotic twins: 3.5 per 1000 births.

Dizygotic twins: 6.7/1000 births (Japan),

40/1000 births (Nigeria).

Indonesia : ?????

# Risk of Multiple Fetal Pregnancy

↑ Spontaneous abortion ( 3 x)

↑ Congenital malformation

Low birth weight: growth restriction, preterm ,  
discordance

Decrease duration of gestation:  
a. 57% of twins → at 35 weeks.  
b. 92% of triplets → at 32 weeks.  
c. all quadruplets → at 29–30 weeks

Intrauterine fetal demise of one twin (late pregnancy), Vanishing twin (early pregnancy).

Multifetal gestation

Stillbirth 5x,  
Neonatal death  
7x

Preterm

3-fold  
increase in cerebral  
palsy

**High neonatal morbidity and mortality  
rate**

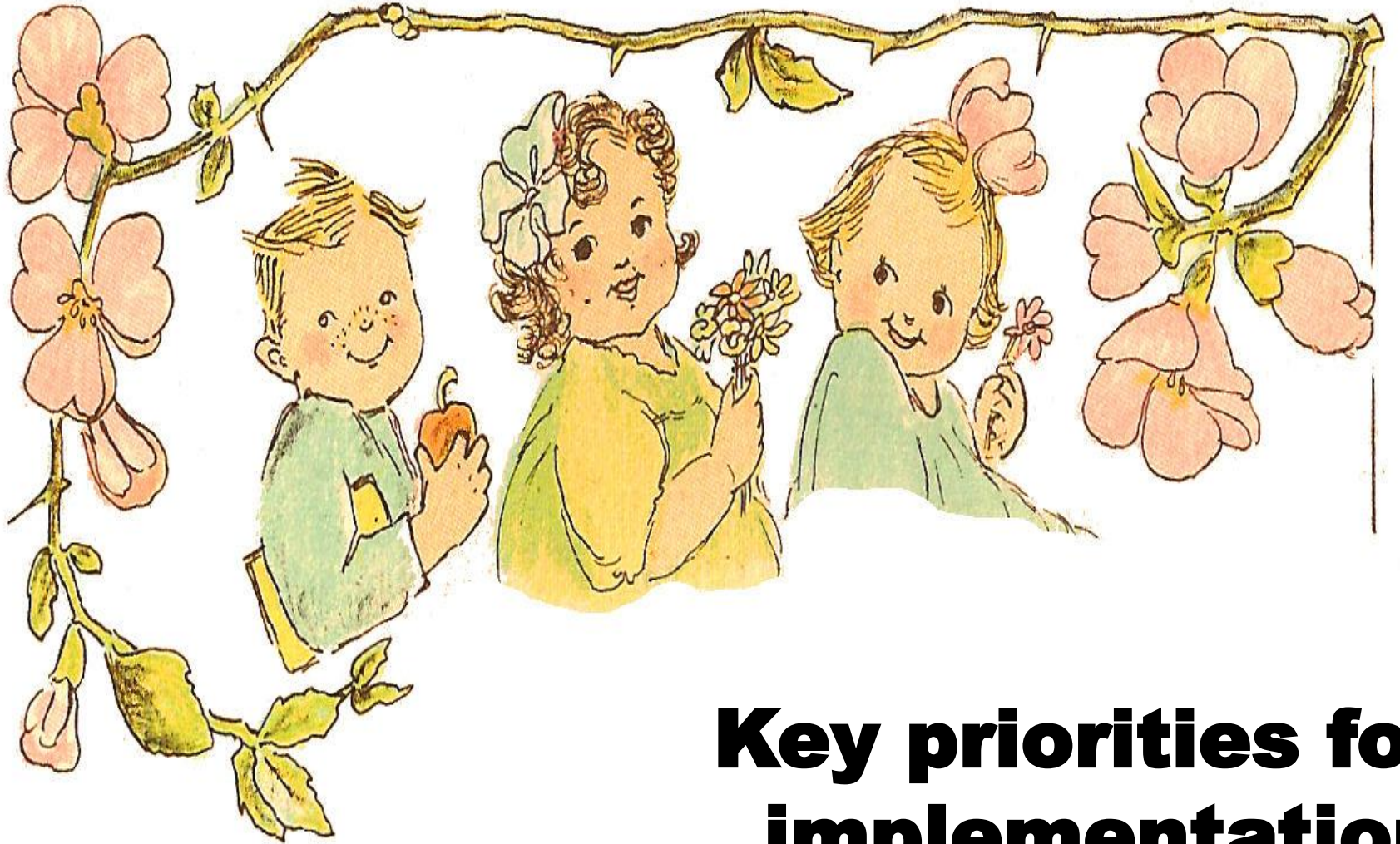
NICU

25 % of twins,  
75 % of triplets

# Content

2. Determining chronicity and planning care





**Key priorities for  
implementation**

# Determining gestational age and chorionicity

1<sup>st</sup> trimester ultrasound scan →

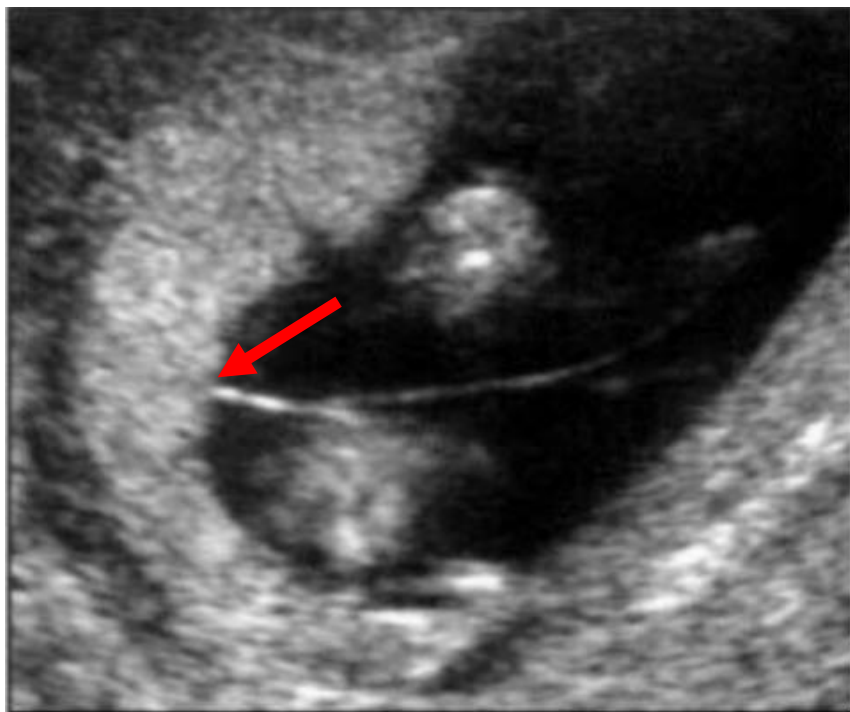
CRL is 45 -84 mm (11<sup>w</sup> 0<sup>d</sup> - 13<sup>w</sup>6<sup>d</sup>): GA, chorionicity and screen for Down's syndrome.

Determine chorionicity by ultrasound using the number of placental masses, the lambda or T-sign and membrane thickness.

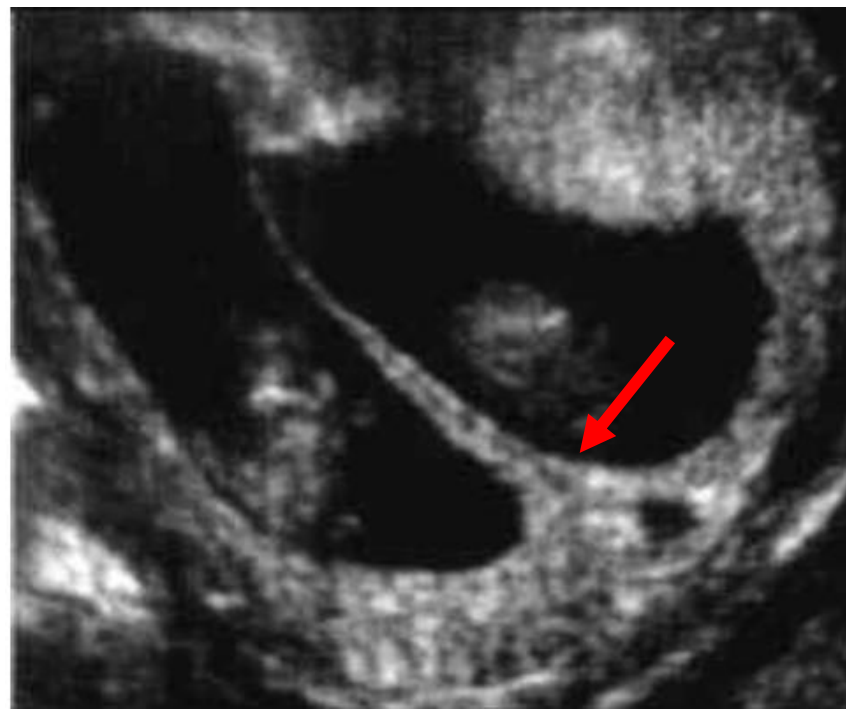
Assign nomenclature to babies.

Care pathways to ensure a care plan in that is **appropriate for the chorionicity**

**T sign**



**Lambda sign**



# USG 3 D

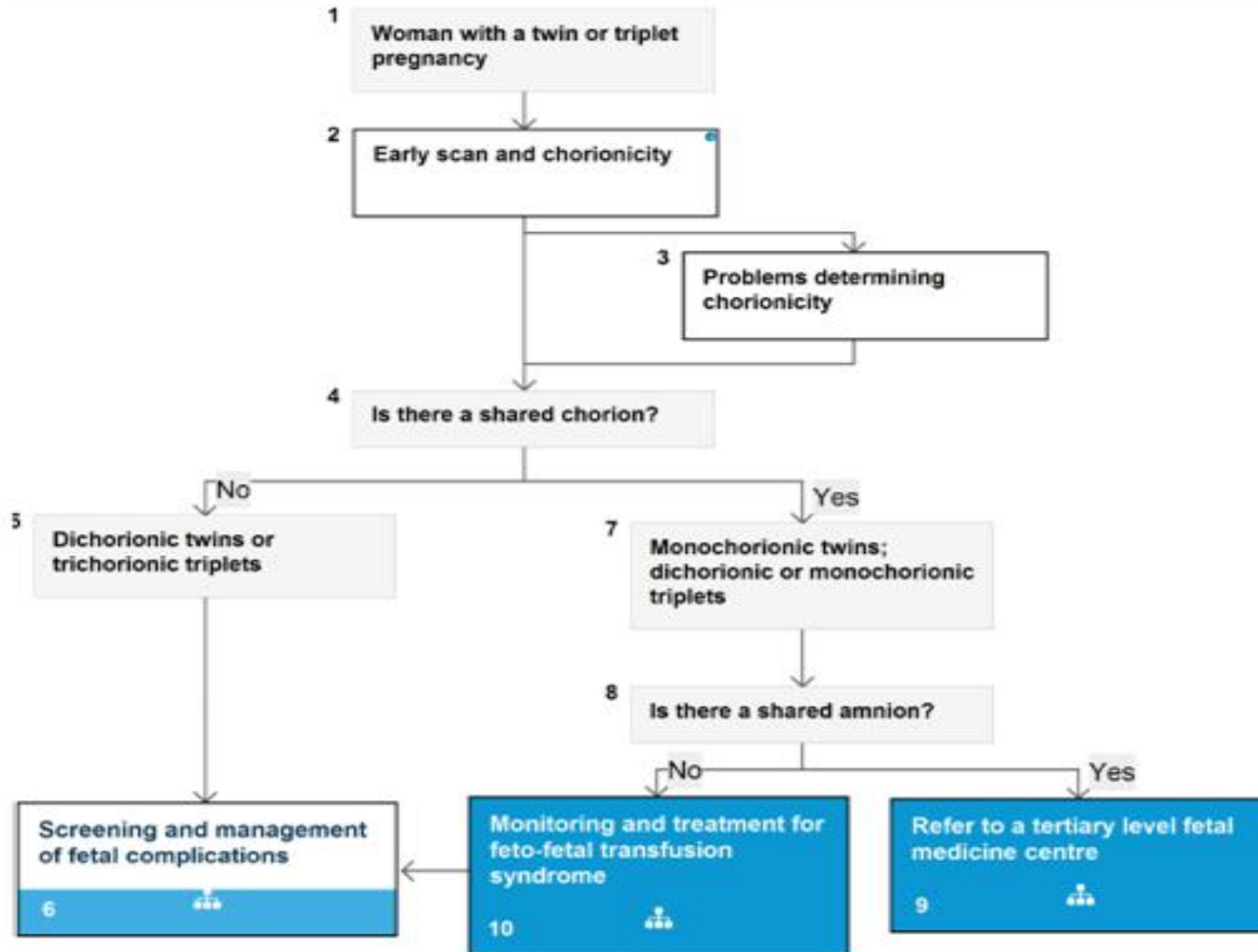


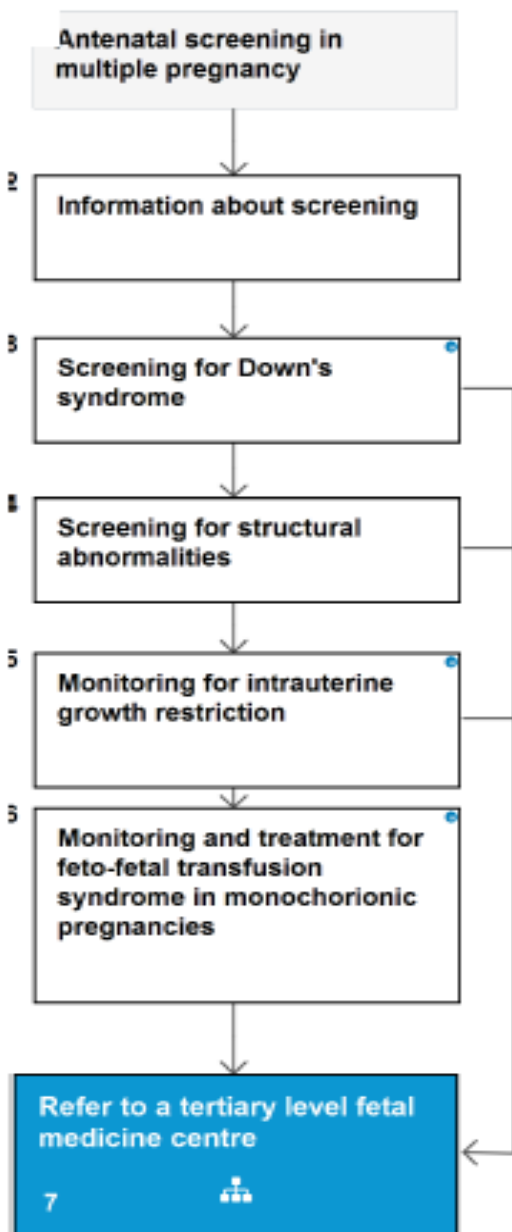
MEDISON

Dr.dr.Efendi Lukas SpOG(K) MI 1.2 10-01-2014  
V4-8 / YELLOW / Tib0.7 20:23:20

MPR M 100:0(%) / Th 40 / C+ / Surface:FRV / 3D Rotation:270







**Serum screening tests are not as sensitive in women with**

**Screening for structural abnormalities (such as cardiac abnormalities) as in routine antenatal care (18 to 20 weeks)**

**to a tertiary level fetal medicine centre.**

# Content

3. Problem specific to monochorionic and monoamniotic twins



# Specific to Monochorionic: Twin-Twin transfusion syndrome

- 10-15% of monochorionic twins.
- Typically around mid-gestation

Outcome

GA at birth

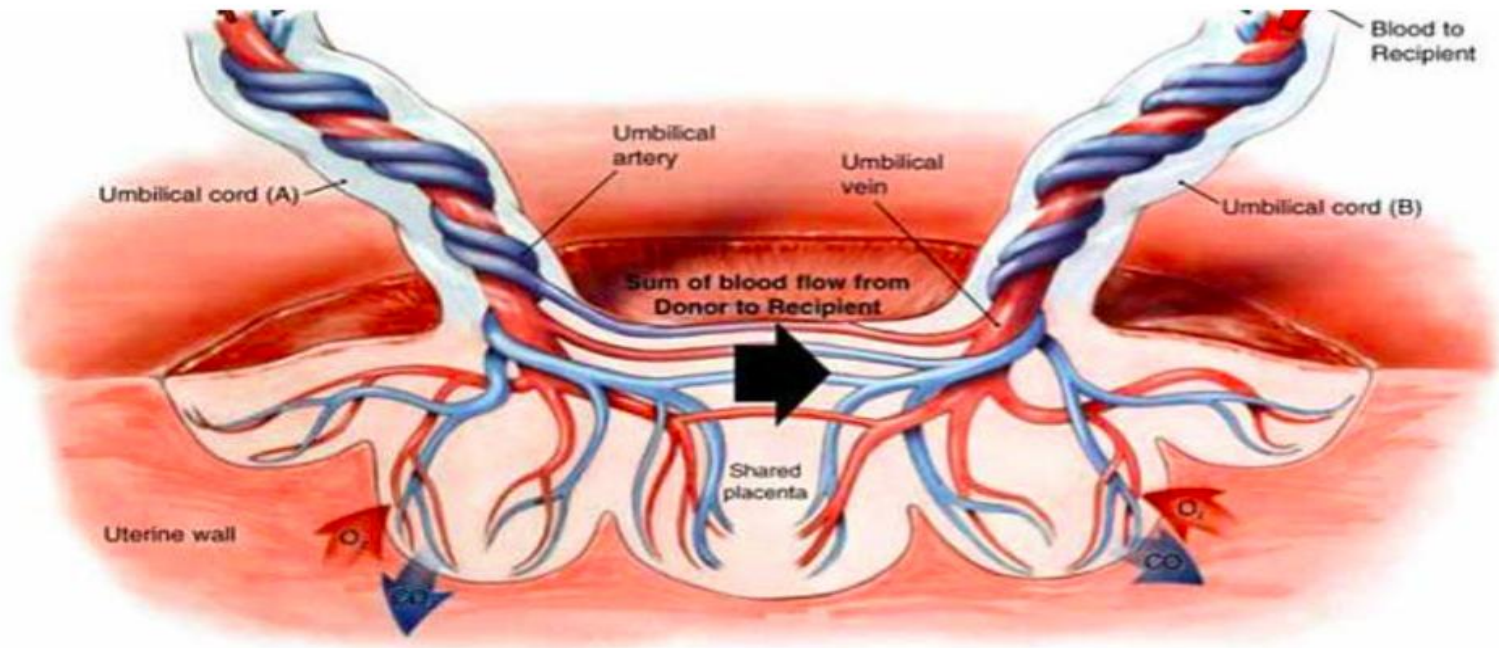
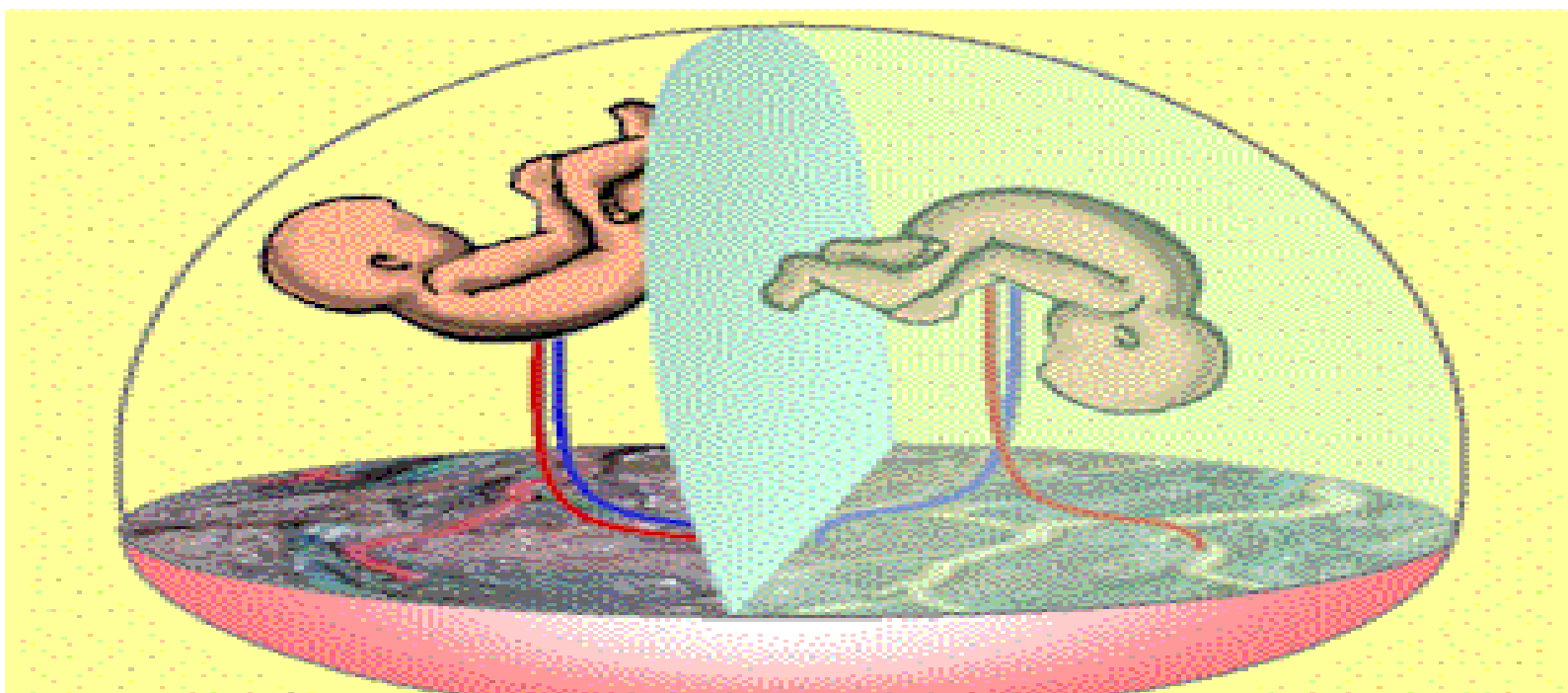
Intrauterine fetal brain ischemia

- Severe TTTS → 60-100% fetal or neonatal mortality rate.  
Mild-to-moderate TTTS → premature delivery.
- Twin pregnancy with sIUD:  
Death of the co-twin → 22.9% of cases  
Acquired brain injury is lower after procedure-related sIUD: 2.6% versus 22.2% ( $P = 0.003$ ).  
Neurologic sequelae in 25% of surviving twins.



Diagnosis of TTTS is based on ultrasound criteria:

- The presence of a single placental mass
- Concordant gender
- Oligohydramnios with MVP < 2 cm in one sac and polyhydramnios in other sac (MVP  $\geq$  8 cm)
- Discordant bladder appearances – severe TTTS
- Haemodynamic and cardiac compromise – severe TTTS



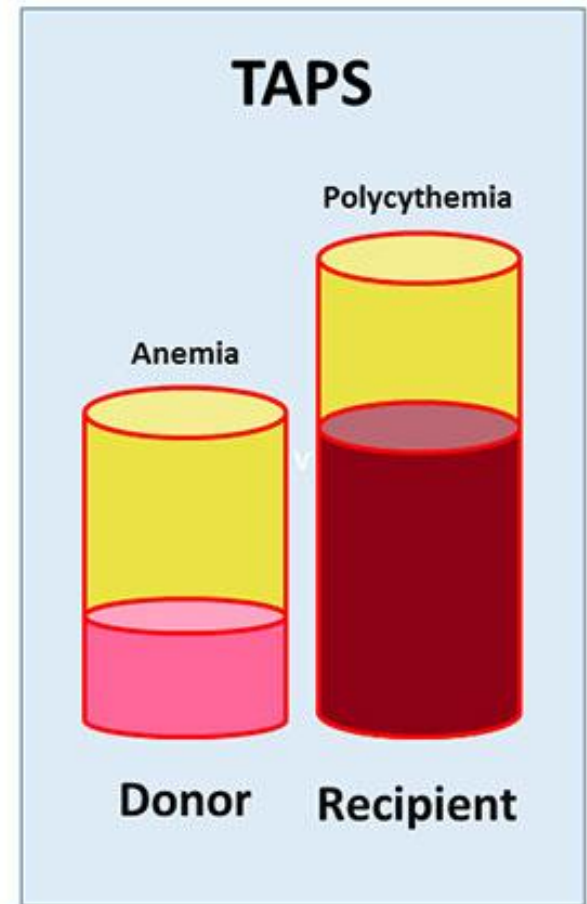
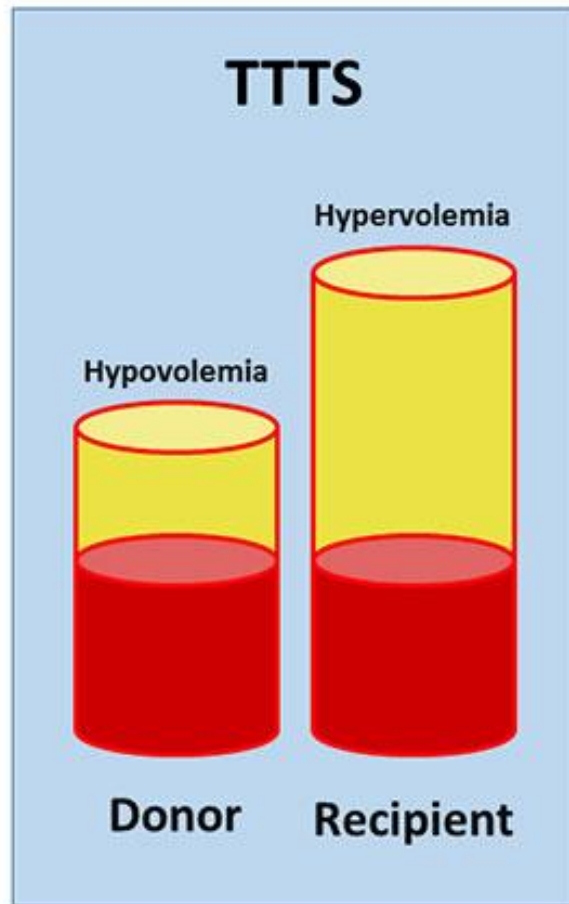
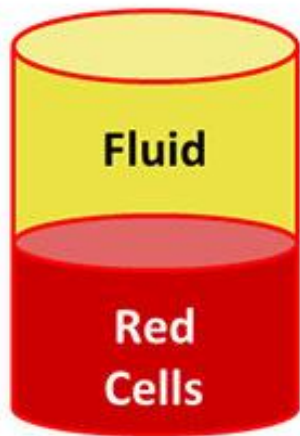




# Specific to Monochorionic: Twin anemia polycythemia sequence

- < 6% of **monochorionic diamniotic** twin pregnancies
- Late second or third trimester.
- Severe discordance in hemoglobin levels (Hb discrepancy greater than 8 g/dL and a high reticulocyte count in the anemic twin)

## Blood components



Specific to Monochorionic

- Antenatal diagnosis:  
Doppler ultrasound abnormalities showing an increased peak systolic velocity in the MCA in the donor twin, suggestive of fetal anemia, and decreased velocity in the recipient twin, suggestive of polycythemia, without concomitant signs of TOPS.

Specific to Monochorionic



# Specific to Monochorionic: Twin Reversed Arterial Perfusion

- 1: 35,000 births
- Malformed fetus without a cardiac pump being perfused by a structurally normal (pump) twin via an A-to-A anastomosis in a reverse direction.
- Perinatal mortality of the pump : 35 to 55% → increased intrauterine volume leading to preterm delivery, cardiac failure, or intrauterine growth restriction due to hypoxia (Lewi L, et al, 2010)



# *Problems for Monoamnicity*

- Rare < 1%
- Mortality rate 10-15%
- Cord entanglement: cord entanglement does not contribute to prenatal morbidity and mortality (Rossi AC, Prefumo F, 2013)
- Perinatal mortality
- Preterm Delivery: elective cesarean delivery starting from 32 weeks GA (ACOG 2014)

# *Problems for Monoamnicity*

- Congenital anomalies: 11% (Baxi LV, Walsh CA, 2010)  
The main causes of perinatal mortality in monoamniotic → typically heart or head structures, usually just in one twin (Prefumo et al, 2015)
- Conjoined twins: one in 90 000–100 000 pregnancies worldwide.
  - \* Anterior (thoracopagus).
  - \* Posterior (pygopagus).
  - \* Cephalic (craniopagus).
  - \* Caudal (ischopagus).



# Content

4. Recommendations for  
multifetal pregnancy



# ACOG practice bulletin no. 144 (2014)

## Level A:

- There is no role for the prophylactic use of any tocolytic agent in women with multifetal gestations, including the prolonged use of betamimetics for this indication.
- Progesterone treatment does not reduce the incidence of spontaneous preterm birth in unselected women with twin or triplet gestations and, therefore, is not recommended.

## Level B

**Determination of chorionicity by late first trimester or early second trimester** in pregnancy is important for counseling and management.

Interventions, such as **prophylactic cerclage/tocolytics/ pessary**, routine hospitalization, and bed rest **should not be used** in women with multifetal gestations.

**Magnesium sulfate** reduces the severity and risk of **cerebral palsy** in surviving infants if administered when birth is anticipated < 32 weeks of gestation.

## Level B

Women with **one previous low transverse cesarean** delivery, who are otherwise appropriate candidates for twin vaginal delivery, may be considered for **TOLAC**.

Women who underwent **pregnancy reduction** from triplets to twins, as compared with those who continued with triplets have lower frequencies of complications.

One course of **antenatal corticosteroids** should be administered between **24 weeks and 34 weeks** of gestation whom at risk of delivery within 7 days.

# Recommendation for monochorionic twin

Step	Detail Scan (weeks)	Rutine scan (weeks)
Determine chorionicity Evaluation : risk, NT, amnion, AC	12	14
		16
		18
Diagnosis of complications (TTTS, s-IUGR, malformation)	20	22
		24
		26
	28	
Diagnosis of late complications (TTTS, s-IUGR, TAPS, IUFD)	32	34
		36
		38



**THANK YOU**