



# MISCARRIAGE PRETERM LABOR

Obstetrics and Gynecology

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# DEFINITION SPONTANEOUS ABORTION (MISCARRIAGE)

Abortion is the expulsion or extraction of an embryo or fetus weighing 500 g or less when it is not capable of independent survival (WHO).

500 g of fetal development is attained approximately at 22 weeks (154 days) of gestation.

# ETIOLOGY

1. **GENETIC FACTORS:** Majority of early miscarriages are due to chromosomal abnormality in the conceptus.
2. **ENDOCRINE AND METABOLIC FACTORS:** Luteal Phase Defect (LPD) results in early miscarriage.
3. **ANATOMICAL ABNORMALITIES:** Cervical incompetence, congenital malformation of the uterus.
4. **INFECTIONS**—Infections could be—Viral, Parasitic, Bacterial.
5. **IMMUNOLOGICAL DISORDERS** – antiphospholipid antibody syndrome (APAS).
6. **UNEXPLAINED**

# SPONTANEOUS ABORTION

- Threatened
- Inevitable
- Complete
- Incomplete
- Missed



# THREATENED MISCARRIAGE

**DEFINITION:** The process of miscarriage has started but has not progressed to a state from which recovery is impossible.

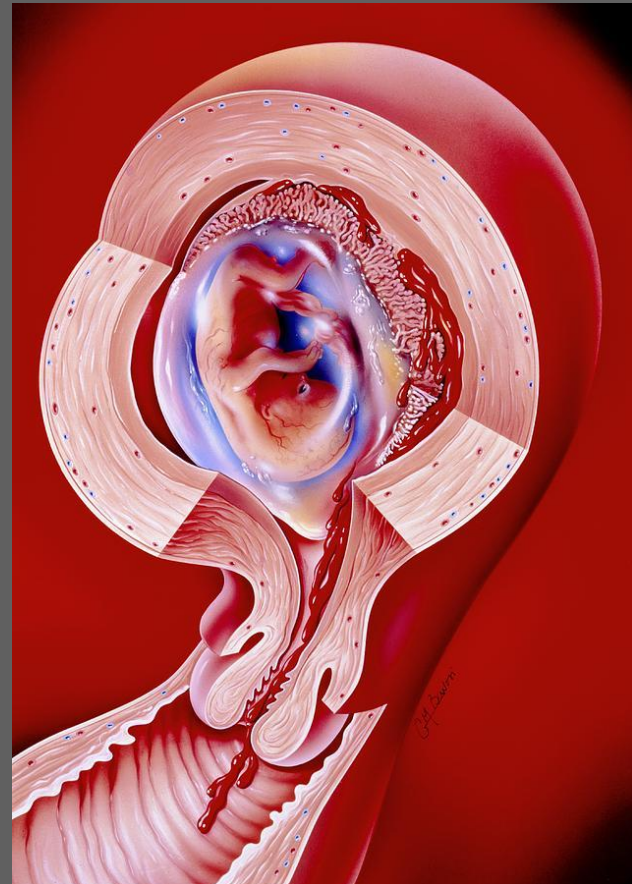
**CLINICAL FEATURES:** The patient complains of:

- pain,
- bleeding.

**Digital examination** reveals the closed external os. The uterine size corresponds to the period of amenorrhea.

# THREATENED MISCARRIAGE TREATMENT:

1. **Rest**: The patient should be in bed for few days until bleeding stops.
2. **Drugs**: Relief of pain may be ensured by spasmolytics: drotaverin, papaverin.
3. **Synthetic progestins**: Susten (100-200 mg) , Dufaston (10 mg) .



# INEVITABLE MISCARRIAGE

**CLINICAL FEATURES:** The patient, having the features of threatened miscarriage, develops the following manifestations:

- increased vaginal bleeding
- aggravation of pain in the lower abdomen.

**BUT!** The features may develop quickly without prior clinical evidence of threatened miscarriage.

**Digital examination** reveals dilated internal os of the cervix

# INEVITABLE MISCARRIAGE

- MANAGEMENT is aimed: to accelerate the process of expulsion.
- Dilatation and evacuation followed by curettage of the uterine cavity.
- Prostaglandin E<sub>1</sub> analog- Misoprostol.





# COMPLETE MISCARRIAGE

- **DEFINITION:** When the products of conception are expelled.
- **MANAGEMENT:** Transvaginal sonography is useful to see that uterine cavity is empty
- **Treatment. Rh-NEGATIVE WOMEN:** A Rh—negative patient without antibody in her system should be protected by Anti-D gamma in case of miscarriage within 72 hours.

# INCOMPLETE MISCARRIAGE

**DEFINITION:** When the entire products of conception are not expelled, instead a part of it is left inside the uterine cavity.

**Internal examination reveals**— uterus smaller than the period of amenorrhea, cervical os often admitting tip of the finger, varying amount of bleeding

**MANAGEMENT:** Evacuation of the retained products of conception.

# MISSED MISCARRIAGE

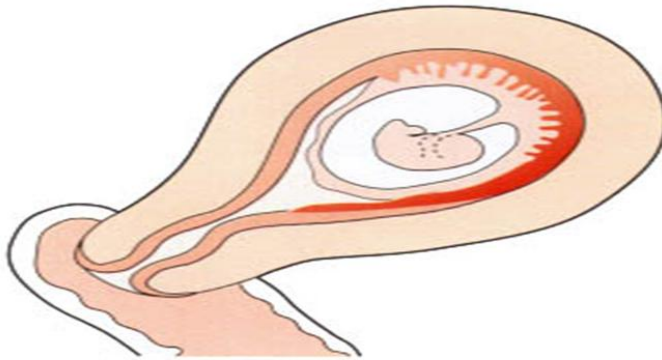
**DEFINITION:** When the fetus is dead and retained inside the uterus for a variable period, it is called missed miscarriage or early fetal demise.

## **CLINICAL FEATURES:**

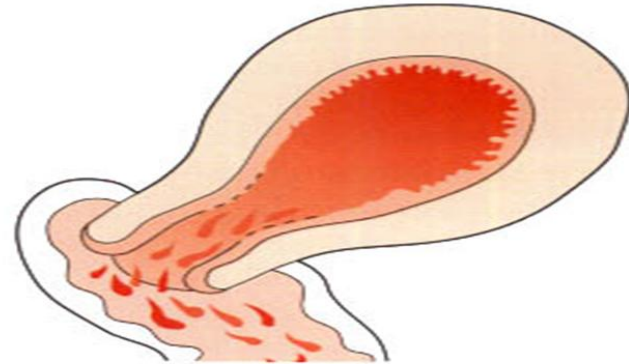
- Cessation of uterine growth
- Immunological test for pregnancy becomes negative
- Real time ultrasonography reveals absence of fetal motion or fetal cardiac movements.

## **MANAGEMENT**

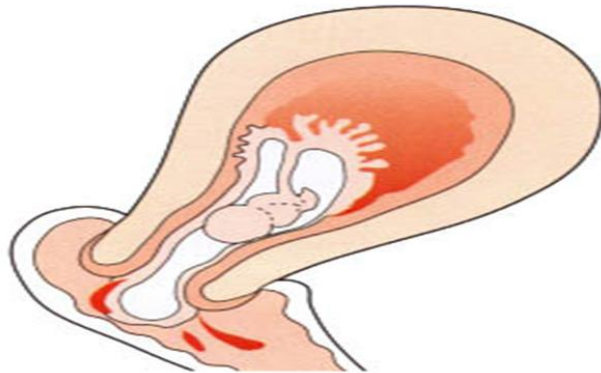
1. Medical management: Prostaglandin E<sub>1</sub> (Misoprostol) is given. Expulsion usually occurs within 48 hours.
2. Dilatation and evacuation.



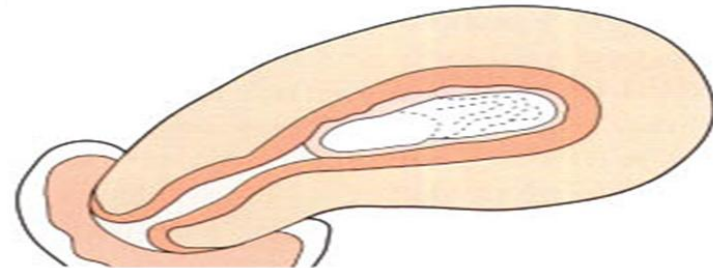
**Threatened miscarriage**



**Incomplete miscarriage**



**Inevitable miscarriage**



**Missed miscarriage**

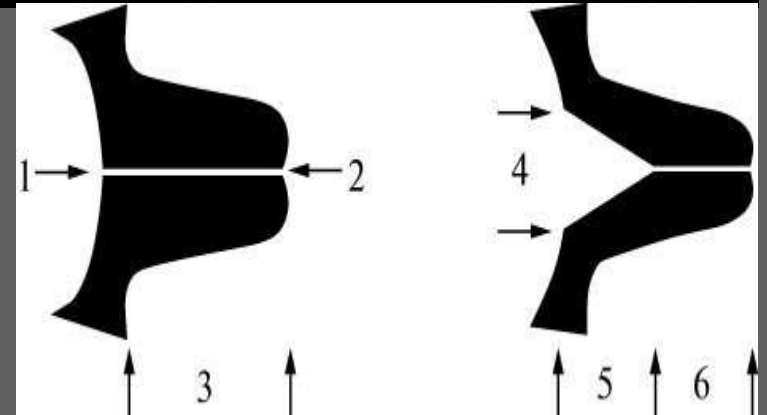
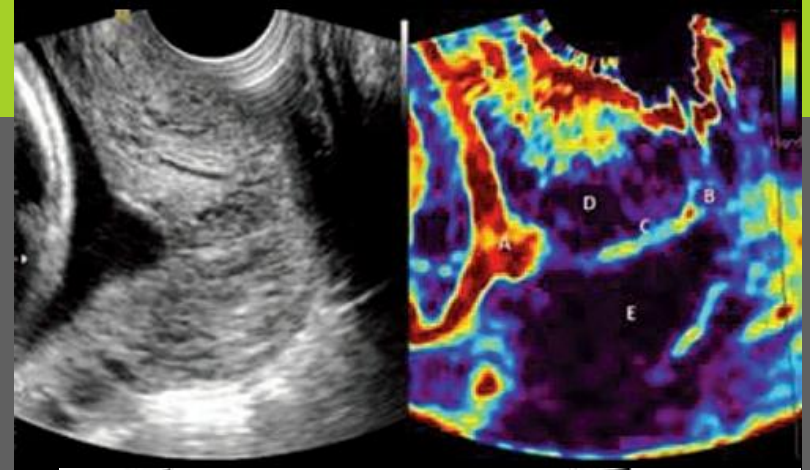
# CERVICAL INCOMPETENCE (INSUFFICIENCY)

- The retentive power of the cervix (internal os) due to the following conditions:
- Congenital Uterine anomalies,
- Iatrogenic— induced abortion by D and C
- Amputation of the cervix or cone biopsy
- Luteal Phase Defect (LPD)



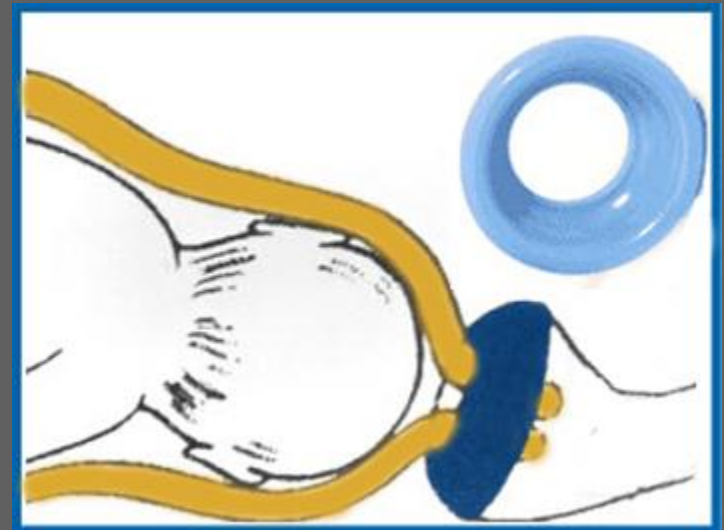
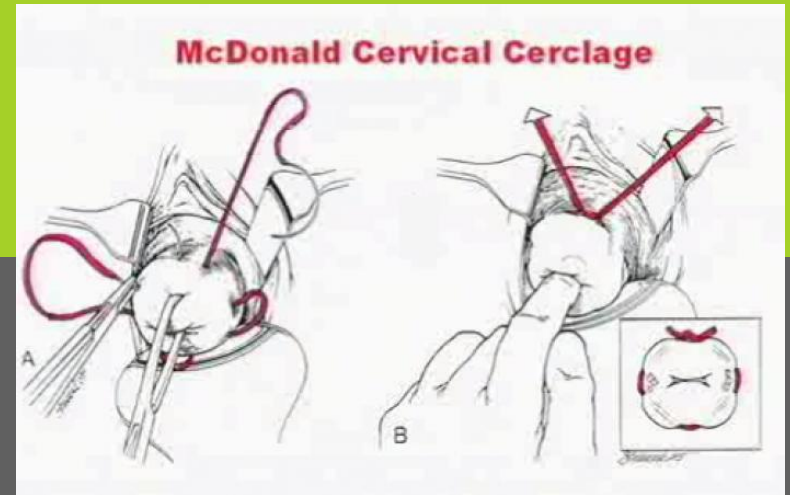
# CERVICAL INCOMPETENCE (INSUFFICIENCY)

- **CLINICAL FEATURES:**
- Painless cervical shortening and dilatation,
- short cervix  $< 25$  mm;
- funnelling of the internal os  $> 1$  cm.





- Luteal Phase Defect (LPD) are treated with **natural progesterone** as vaginal suppository (Susten, Utrogestan).
- **Cerclage operation**
- **Pessary**





# CERVICAL PESSARY



# PRETERM LABOR (SYN: PREMATURE LABOR)

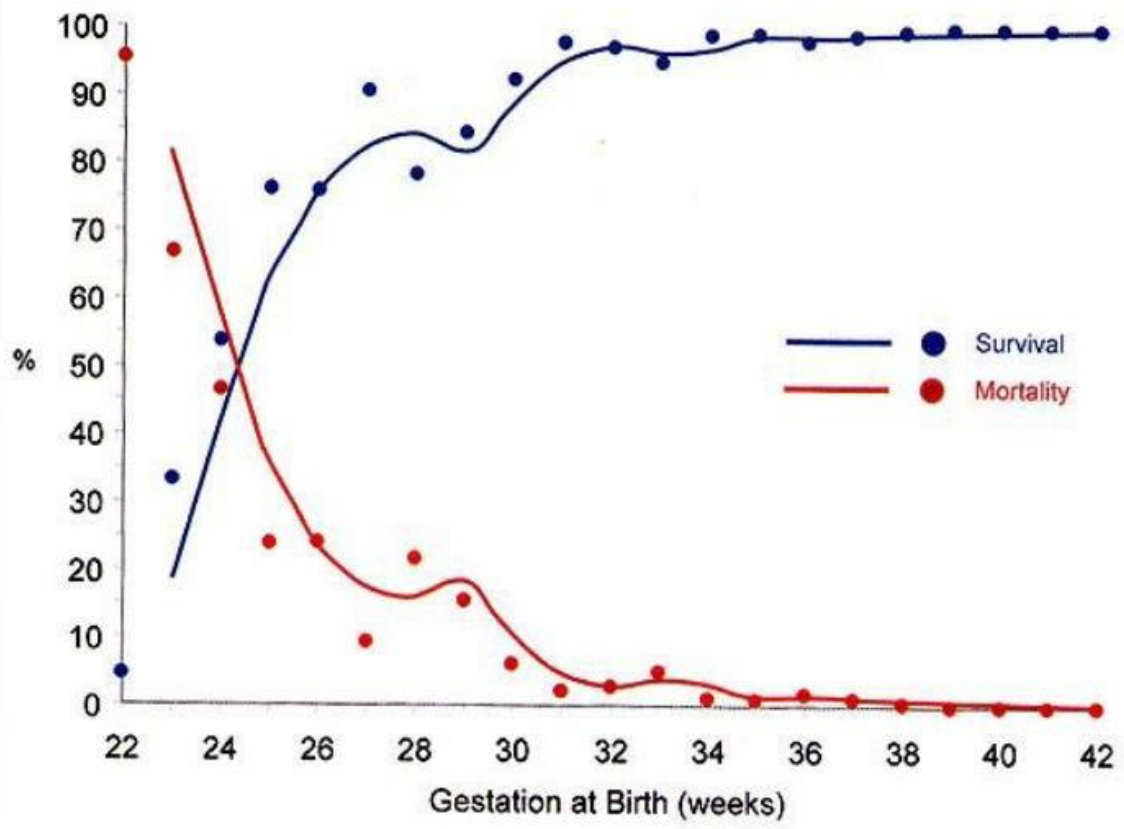
**DEFINITION:** Preterm labor (PTL) starts in 22-37th completed week (< 259 days).

Preterm birth is the significant cause of perinatal morbidity and mortality.



# PRETERM LABOR: OVERVIEW

- Accounts for 5–10% of births (4% in Belarus) but 75% of perinatal deaths.
- It also causes long-term handicap—blindness, deafness, and cerebral palsy.
- The risk is higher the earlier the gestation.



# DIAGNOSIS:

- **Regular uterine contractions** (at least one in every 10 min.);
- **Dilatation** ( $> 2$  cm) and effacement of the cervix;
- **Length of the cervix** (measured by TVS)  $< 2.5$  cm and funneling of the internal os.
- **Pelvic pressure**, backache and or vaginal discharge or bleeding.



# DIAGNOSIS:

- Fetal fibronectin in cervico-vaginal fluid.
- Proteins that bind insulin-like growth factor in the cervix.
- **IT IS BETTER TO OVERDIAGNOSE PRETERM LABOR THAN TO IGNORE THE POSSIBILITY OF ITS PRESENCE.**

# FETAL FIBRONECTIN (FFN)

- FFN is a protein **not** usually **present** in cervicovaginal secretions at 22–36wks.
- Those with a +ve FFN test are more likely to deliver (test for FFN with swab and commercially available kit).
- Predicts preterm birth within 7–10 days of testing.

# Risk of Preterm Birth (< 35 wks)

History of Delivery	18-26	27-31	32-36	≥ 37
<b>FFN (-)</b>				
CL ≤ 25	25%	25%	25%	6%
CL 26-35	14%	14%	13%	3%
CL > 35	7%	7%	7%	1%
<b>FFN (+)</b>				
CL ≤ 25	64%	64%	63%	25%
CL 26-35	46%	45%	45%	14%
CL > 35	28%	28%	27%	7%




# MANAGEMENT OF PL

- **Bed rest**
- **Glucocorticoids to the mother to reduce neonatal RDS.**
- **Tocolytic drugs.** The tocolytic agents can be used as short term (1–3 days) or long-term therapy. Relaxes the muscles of the uterus. Improve utero-placental blood flow
- **Antibiotics** to prevent neonatal infection with Group B Streptococcus (GBS)

Drug	Mechanism	Efficacy	Side Effects	Contraindications
<b>Beta adrenergic receptor agonist (terbutaline )</b>	Interferes w/ myosin light chain kinase  Inhibits actin myosin interaction	? 48 hours.  No change in perinatal outcome	Tachycardia, palpitations, hypotension, SOB, pulmonary edema, hyperglycemia	Maternal cardiac disease, uncontrolled diabetes and hyperthyroidism
<b>Magnesium Sulfate</b>	Competes with Calcium at plasma memb (?)	Unproven	Diaphoresis, flushing, pulmonary edema	Myasthenia gravis, renal failure
<b>Ca Channel Blocker (nifedipine)</b>	Directly block influx of Ca thru cell membrane	Unproven	Nausea, flushing, HA, palpitations	Caution: LV dysfunction, CHF
<b>Cyclooxygenase Inhibitors (indomethacin)</b>	Decrease prostaglandin production	Unproven	Nausea, GI reflux, spasm fetal DA, oligo	Platelet or hepatic dysfunction, GI ulcer Renal dysfunction, asthma



# Oxytocin Receptor Blockers

- Atosiban new drug that appears to be effective
  - Causes nausea, headache, chest pain, arthralgias and may inhibit lactation
- 



# MANAGEMENT IN LABOR

The principles in management of preterm labor are:

- 1. To prevent birth asphyxia.** The birth should be gentle and slow, epidural analgesia.
- 2. To prevent birth trauma.** Episiotomy, cesarean delivery.

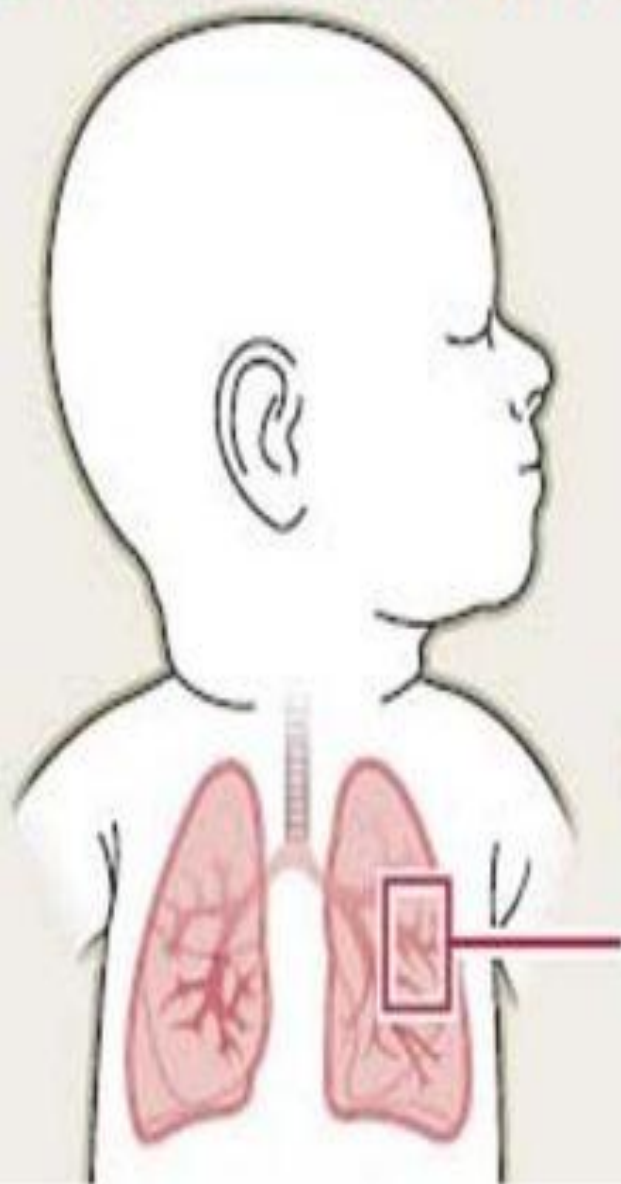
# PROGNOSIS:

- Preterm labor and delivery of a low birth weight baby results in high perinatal mortality and morbidity.
- However, with neonatal intensive care unit, the survival rate of the baby is more than 90%.



# LUNG COMPLICATIONS

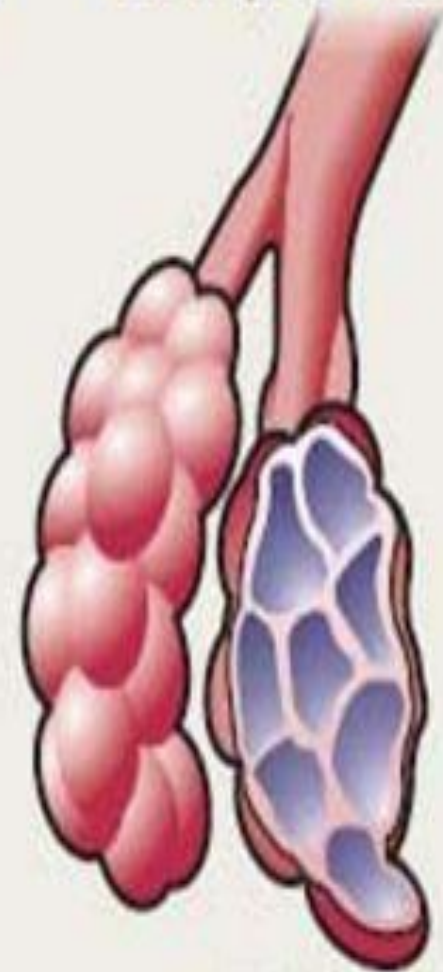
## Respiratory distress syndrome



Normal alveoli



Collapsed alveoli





# RDS

- Clinicians should offer antenatal **corticosteroid treatment** to women at risk of preterm delivery because antenatal corticosteroids are associated with a significant reduction in rates of RDS, neonatal death and intraventricular haemorrhage
- The optimal treatment–delivery interval for administration of antenatal corticosteroids is **more than 24 hours after** the start of treatment.
- Corticosteroid therapy is contraindicated if a woman suffers from systemic infection including tuberculosis. Caution is advised if suspected chorioamnionitis is diagnosed.

# RDS

- **Betamethasone** is the steroid of choice to enhance lung maturation. (not in Belarus)
- Recommended therapy involves two doses of betamethasone 12 mg, given intramuscularly 24 hours apart.

# Antenatal Steroids

- Dosage:
  - Dexamethasone 6 mg q 12 h
  - Betamethasone 12.5 mg q 24 h
- Repeated doses - NO
- Effect:
  - Within several hours
  - Max @ 48 hours

