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).

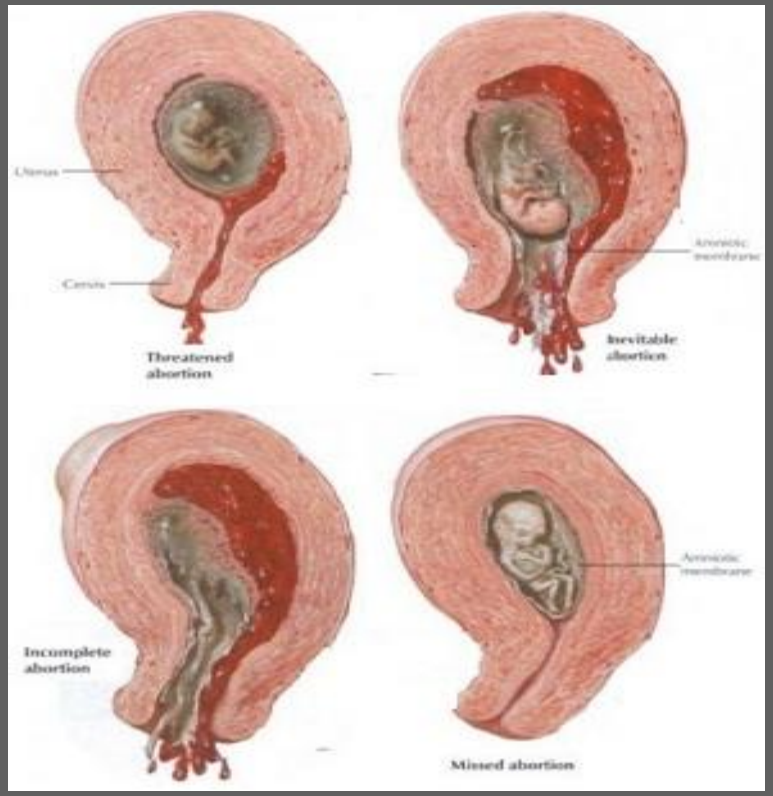
500 g of fetal development is attained approximately at 22 weeks (154 days) of gestation.

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.

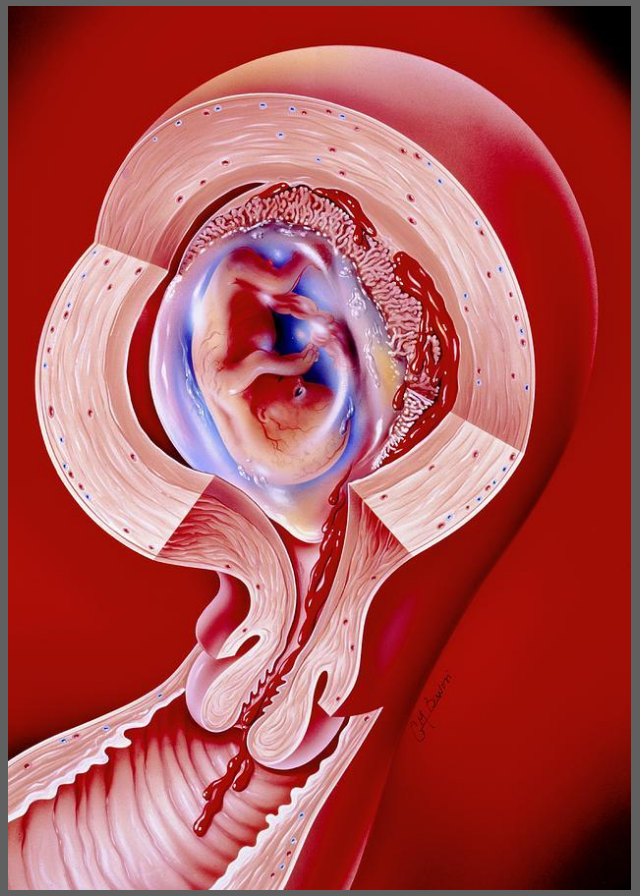
CLINICAL FEATURES: The patient complains of:

- 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 E1 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

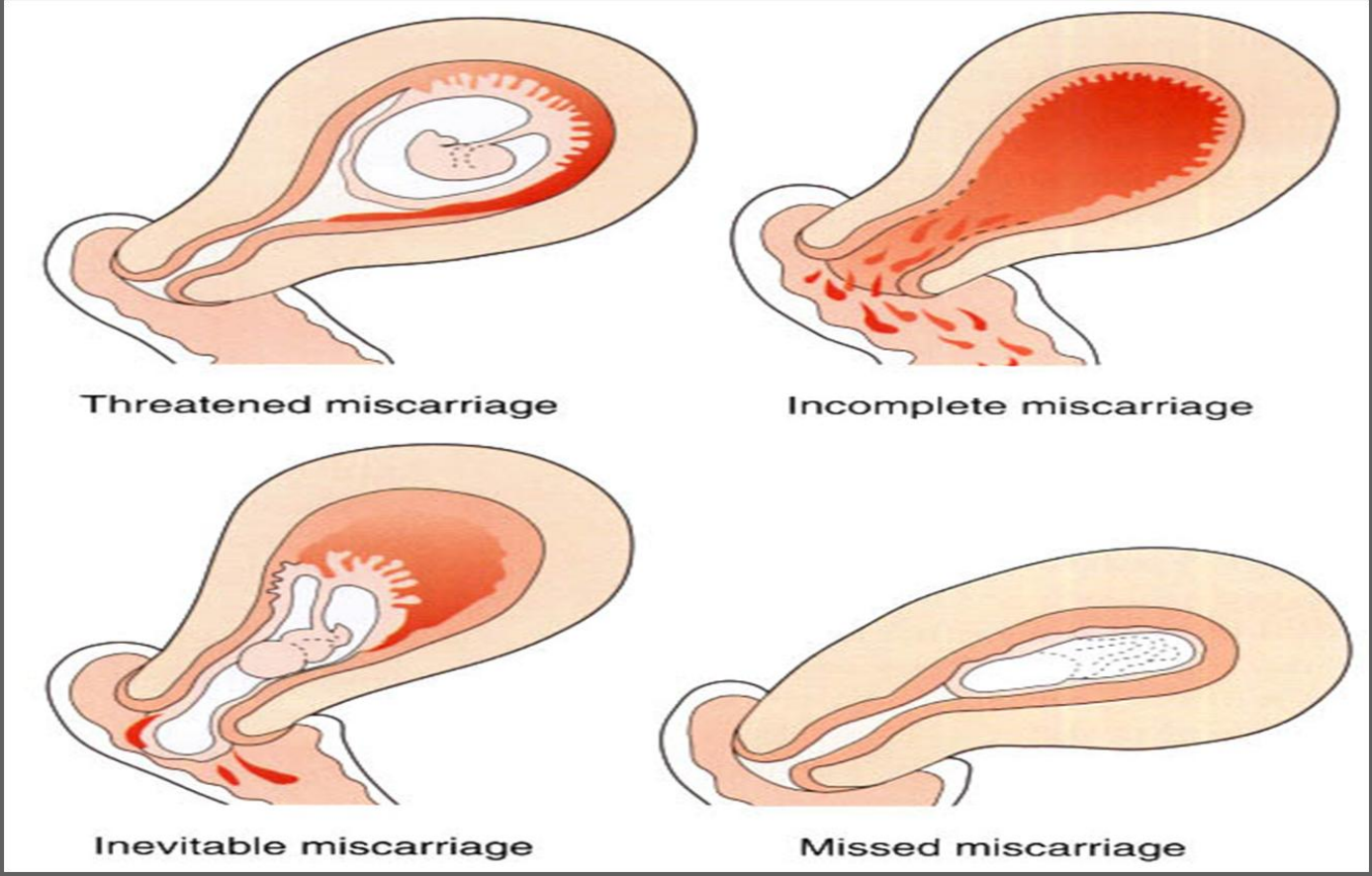
DEFINITION: When the fetus is dead and retained inside the uterus for a variable period, it is called missed miscarriage or early fetal demise.

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 E1 (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)

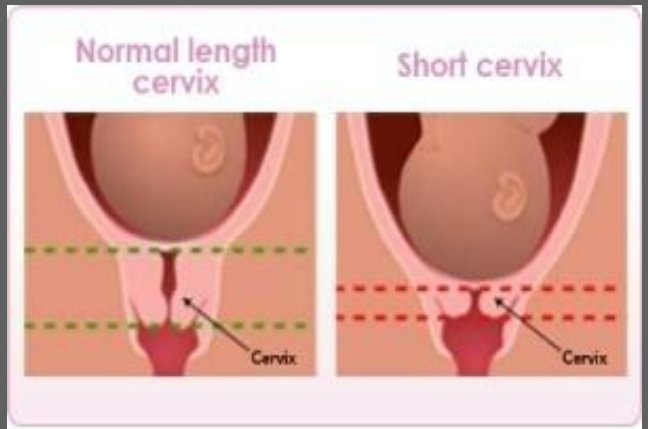
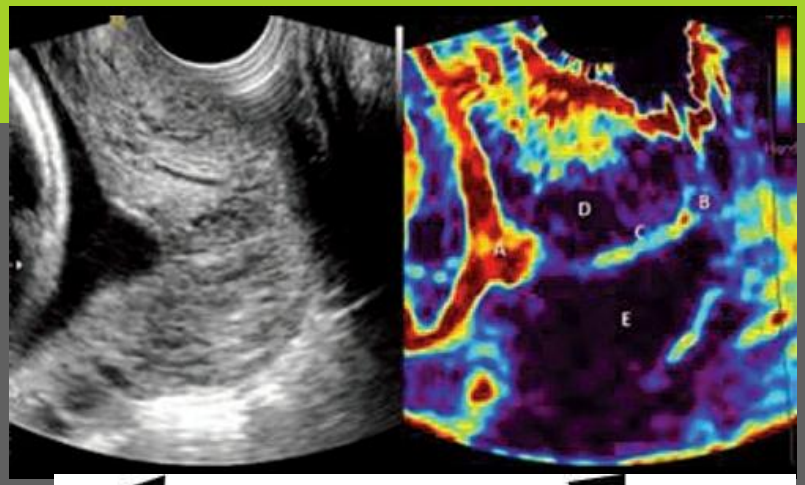
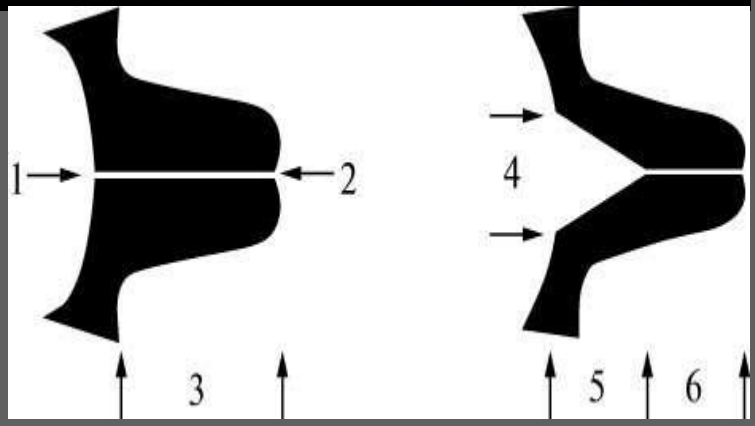


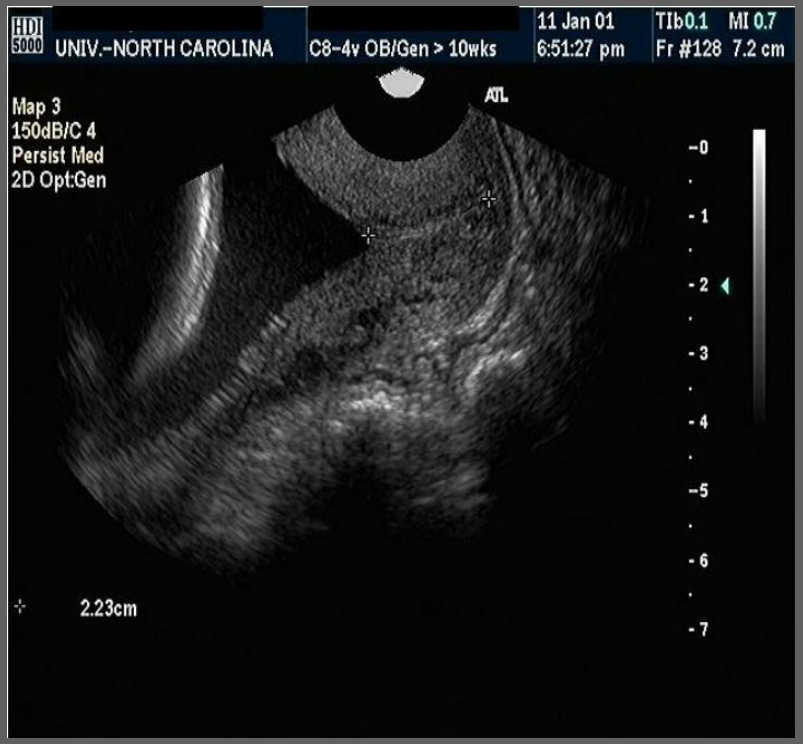
Image credit: National Institutes of Health, 2011

CERVICAL INCOMPETENCE (INSUFFICIENCY)

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



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C8-4v OB/Gen > 10wks
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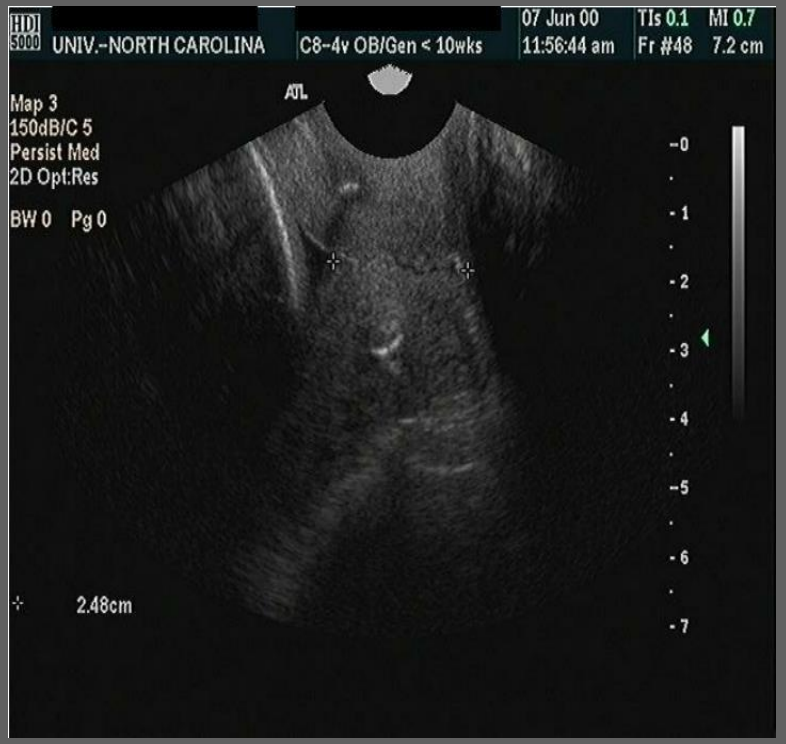
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Map 3
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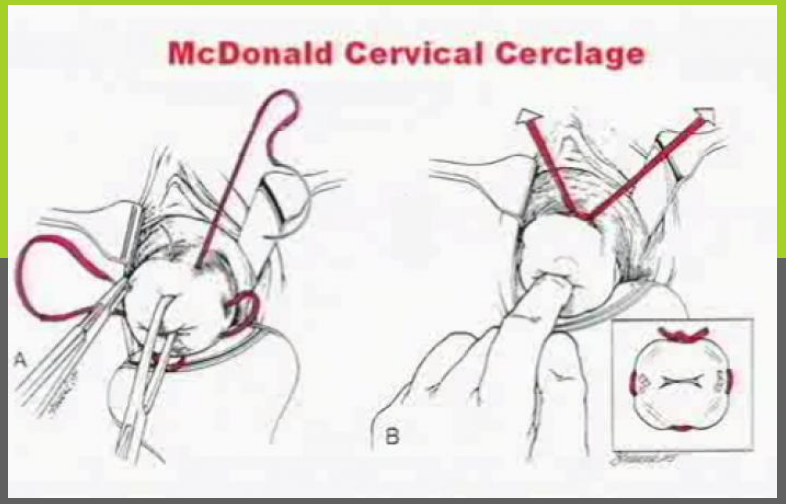
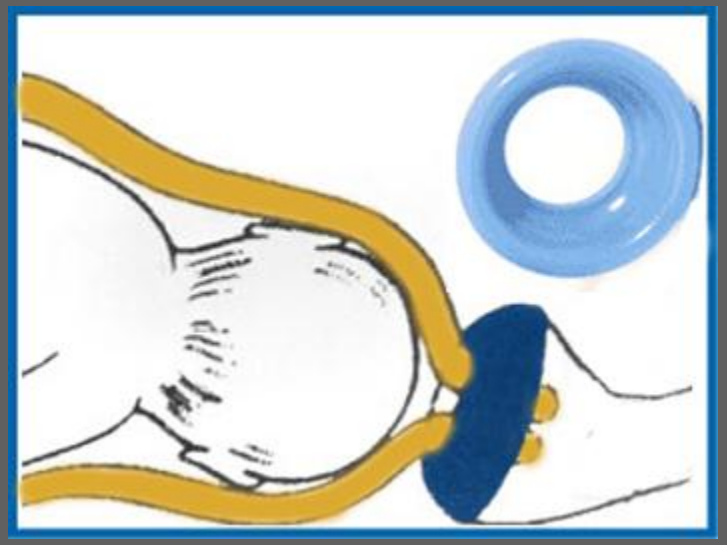
2.48cm

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





CERVICAL PESSARY

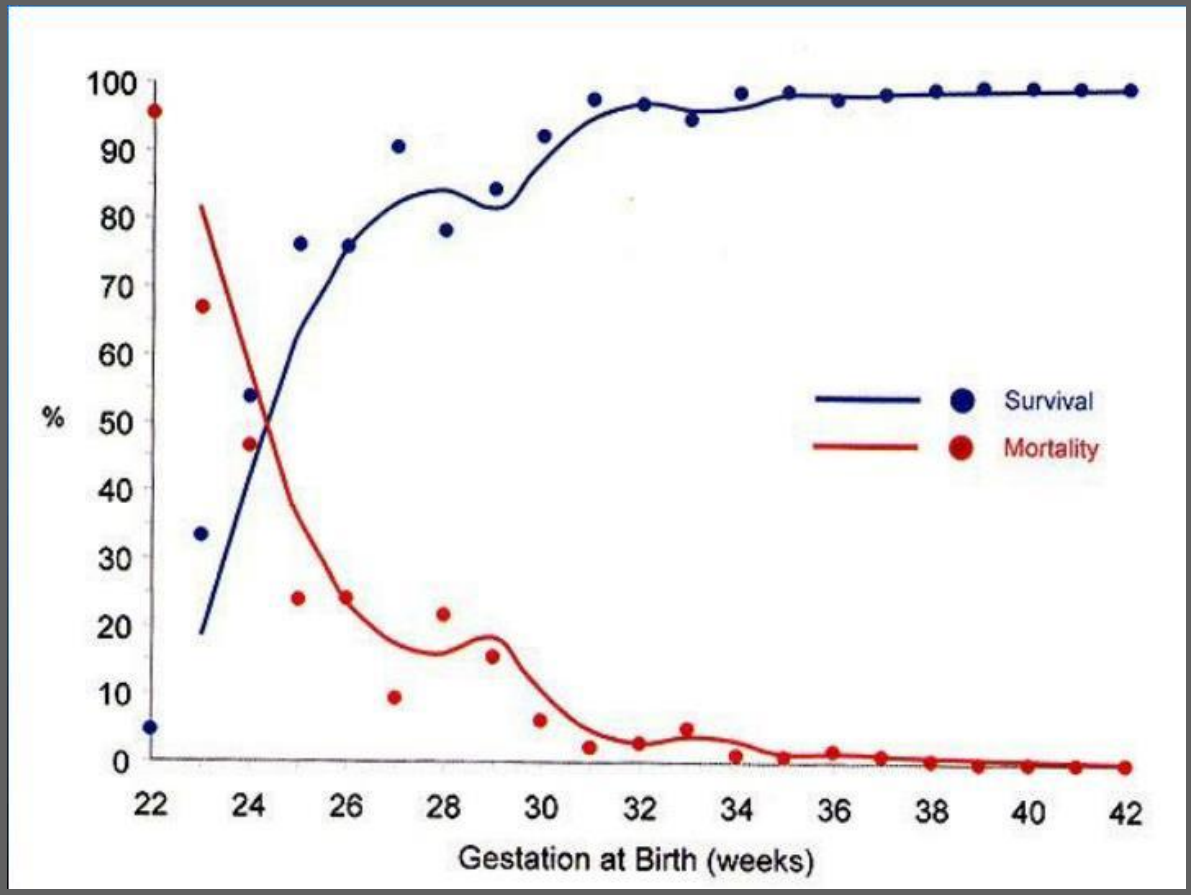
PRETERM LABOR (SYN: PREMATURE LABOR)

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.


100
90
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70
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32
34
36
38
40
42
Gestation at Birth (weeks)
Survival
Mortality

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
FFN (-)				
CL ≤ 25	25%	25%	25%	6%
CL 26-35	14%	14%	13%	3%
CL > 35	7%	7%	7%	1%
FFN (+)				
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
Beta adrenergic receptor agonist (terbutaline)	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
Magnesium Sulfate	Competes with Calcium at plasma memb (?)	Unproven	Diaphoresis, flushing, pulmonary edema	Myasthesthenia gravis, renal failure
Ca Channel Blocker (nifedipine)	Directly block influx of Ca thru cell membrane	Unproven	Nausea, flushing, HA, palpitations	Caution: LV dysfunction, CHF
Cyclooxygenase Inhibitors (indomethacin)	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


Tractocile
atosiban
Tractocile
ATOSIBAN
Solución para Infusión
7,5 mg/ml
Contenido:
1 frasco ampolla con 5 ml
VENTA BAJO RECETA
FERRING
Tractocile
ATOSIBAN
Solución Inyectable i.v.
7,5 mg/ml
Contenido:
1 frasco ampolla con 0,9 ml
VENTA BAJO RECETA

MANAGEMENT IN LABOR

The principles in management of preterm labor are:

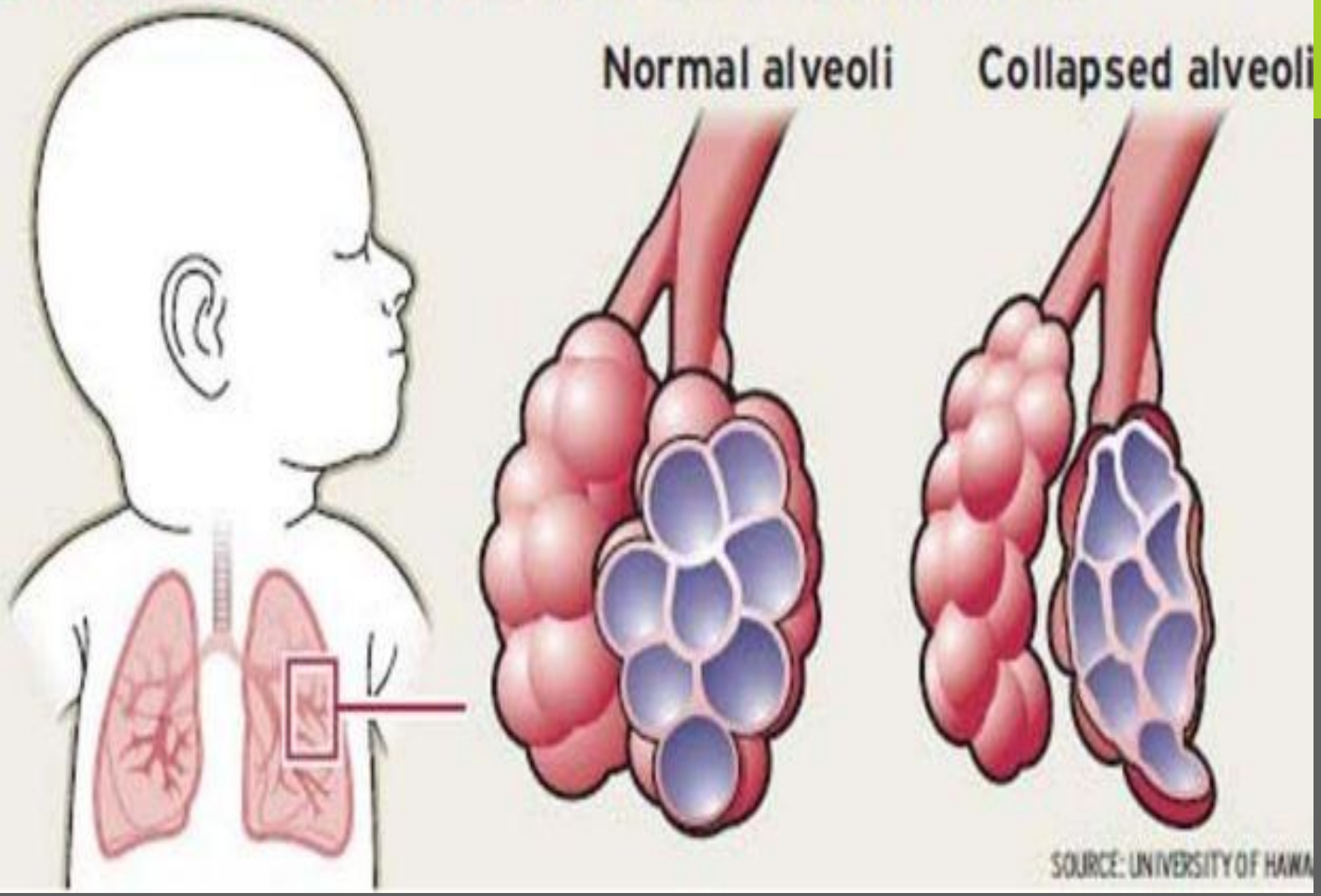
1. **To prevent birth asphyxia**. The birth should be gentle and slow, epidural analgesia.
2. **To prevent birth trauma**. Episiotomy, cesarean delivery.

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



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