

Amniotic fluid

Normal & abnormal

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Obstetric & gynecological nursing


Objectives

By the end of this lecture the student will be able •

Identify the normal & abnormal amniotic fluid •

List sign & symptom of it •

Explain complication •



Dynamic fluid produce and absorbed fetus •
contribute more than mother

Amniotic fluid is a clear, yellow fluid which is •
found within the first 12 days following
conception within the amniotic sac. It
surrounds the growing baby in the uterus

Amniotic fluid function:

- 1-room for fetal growth, movement and development. •
- 2-Ingestion into GIT→ growth and maturation. •
- 3- Fetal pulmonary development (20 weeks). •
- 4- Protects the fetus from trauma. •
- 5- Maintains temperature. •
- 6- Contains antibacterial activity. •
- 7-Aids dilatation of the cervix during labour. •



8-Nutrition of fetus ◦

9- Sterilization of birth canal after ◦
rupture of membrane

Clinical importance of AF:

Screening for fetal malformation •
(serum α -fetoprotien).

Assessment of fetal well-being •
(amniotic fluid index).

Assessment of fetal lung maturity •

Diagnosis and follow up of labour. •

Diagnosis of PROM •

Volume and composition

From 20 weeks up to term (mainly •

- fetal urine): At 18th week, the fetus voids 7-14ml/day; at term fetal kidneys secrete 600-700ml of urine/day into AF.

- Fetal respiratory tract secretes 250ml/day into AF.

- Fluid transfers across the placenta.

- Fetal oro-nasal secretions.

Secretion is controlled by: •

- Fetal swallowing at term removes 500ml/day.

- Reabsorption into maternal plasma (osmotic gradient).

AF constituents: •

- urea, creatinine & uric acid + desquamated fetal cells, vernix, lanugo hair & others → hypo-osmolar amniotic fluid....

Amniotic fluid volume :

• About 500 mls enter and leave the amniotic sac each hour.

• gradual ↑ up to 36 weeks to around 600 to 1000 ml then ↓ after that.

• The normal range is wide but the approximate volumes are:

- 500 ml at 18 weeks
- 800 ml at 34 weeks.
- 600 ml at term.

Amniotic fluid abnormalities

Oligohydramnios: ■

Defined as reduced amniotic fluid less than 500ml

Polyhydramnios: ■

Defined as excessive amount of amniotic fluid of 2000 ml or more.

Causes of oligohydramnios:

I. Fetal causes:

- * Renal cause (57%):
 - Renal agenesis (Potter's syndrome).
 - polycystic kidney.
 - Urethral obstruction).

- * Fetal growth restriction.
- * Fetal death.
- * Post term pregnancy.
- * Preterm premature rupture membranes

Causes of oligohydramnios:

2. Maternal causes:

Uteroplacental insufficiency. •

Preeclampsia. •

3. Placental causes:

twin-twin transfusion. •

4. Idiopathic •

Complications of oligohydramnios:

In early pregnancy: •

Amniotic adhesions or → amputation/death. •

Pressure deformities (club feet). •

Pulmonary hypoplasia: •

- Thoracic compression.
- No breathing movement.
- No amniotic fluid retain.

Flattened face. ■

In late pregnancy: •

Fetal growth restriction. •

Placental abruption. •

Preterm labour. •

Fetal distress. •

Fetal death. •

Meconium aspiration. •

Labour induction/CS. •

Oligohydramnios:

Diagnosis: ❖

- **Fundal** > date.

- **AF I**

IUGR: abdominal circumference < 10th centile. -

Doppler abnormalities -

Congenital fetal anomalies. -

Management: ❖

Treat the cause (prom, preeclampsia). -

Assess fetal wellbeing -
(U/S/CTG/Doppler/BPP).

Vesicoamniotic shunting (urethral -
obstruction).

Amnioinfusion (no↓ in fetal death). -

Causes of polyhydramnios

Fetal malformation: •

- GIT: esophageal/duodenal atresia, tracheoesophageal fistula.

- CNS: anencephaly (↓swallowing, exposed meninges, no antidiuretic hormone).

Twin-twin transfusion → • fetal polyuria.

Hydrops fetalis: congestive • heart failure, severe anaemia or hypoproteinemia → placental transudation

diabetes mellitus (osmotic • diuresis).

Idiopathic. •

diagnosis of polyhydramnios

Symptoms: •

- dyspnea.
- edema.
- abdominal distention
- preterm labour.

Abdominal examination: •

- ↑uterus than expected.
- difficult to palpate fetal parts.
- difficult to hear fetal heart sound.
- ballotable fetus.

Ultrasound: •

- excessive amniotic fluid.
- fetal abnormalities.



Specimen: •

Amniotic fluid (10 to 20 mL) collected in a clean amber glass or plastic container

management

Minor degrees: no treatment. •

Bed rest, diuretics, water and salt restriction: ineffective. •

**Hospitalization: dyspnea, abdominal pain or difficult •
ambulation.**


**Amniocentesis: to relieve maternal distress and to test •
for fetal lung maturity**

**. Complications: ruptured membrane, chorioamnionitis, •
placental abruption, preterm labour.**



DNRING Amniocentesis •

Nursing care : •



Record maternal and fetal baseline vital signs, •
and continue to monitor throughout the
amniocenteses procedure


. Monitor for uterine contractions. Monitor fetal •
vital signs using ultrasound.



Tray for emergency equipment readily available. •

Observe standard precautions, and follow the general guidelines in Patient Preparation and Specimen Collection. •

Positively identify the patient, and label the appropriate specimen container with the corresponding patient demographics, initials of the person collecting the specimen, date, and time of collection



Apply slight pressure to the site after the fluid is collected. If there is no evidence of bleeding or other drainage, apply a sterile adhesive bandage to the site.

Monitor the patient for complications related to the procedure (e.g., premature labor, allergic reaction, anaphylaxis)

Thank You

