

# Maternal and Child Nursing

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## Fertility Assessment

Subfertility- is said to exist when a pregnancy has not occurred after at least 1 year of engaging in unprotected coitus

Sterility- inability to conceive because of a known condition, such as absence of the uterus

### Fertility Assessment

- A woman younger than 35 years old is usually suggested to have an evaluation after 1 year of subfertility
- Older than 35 years old, she should be seen after 6 months. Referral is recommended sooner because assisted reproductive strategies such as IVF, as well as common alternatives to natural childbearing such as adoption, are also limited by age

Initial history taking for the subfertile couple

#### Male

- General health
- Typical 24-hour food intake including alternative therapies such as herbs and whether he ingests alcohol, uses recreational drugs, smokes, or uses tobacco
- Congenital health problems, such as hypospadias, cryptorchidism, past illness such as mumps (alters hormonal balances), orchitis (inflammation of the testicles), urinary tract infection, or sexually transmitted diseases that could affect fertility
- If he ever had radiation to his testes because of childhood cancers, x-rays, or an industrial accident
- If he had an operation such as surgical repair of a hernia or torsion of the testes, which could have compromised blood supply to his testes
- Any current illness, particularly an endocrine one or a low-grade infection
- If his job or lifestyle involve sitting all day
- Sexual practices, such as frequency of coitus, masturbation, coital positions used, or if ever he experiences failure to achieve ejaculation
- Past contraceptive measures, if any, he has used or if he has children from a previous relationship

#### Female

- General health
- Nutrition, including an adequate source of folic acid and avoidance of trans fat
- Current or past reproductive tract problems, such as infections
- Past history of a childhood cancer treated with radiation that might have reduced ovarian function or any exposure to occupational hazards, such as x-rays or toxic substances
- Abdominal or pelvic operations that could have compromised blood flow to the pelvic organs
- Overall health, emphasizing endocrine problems such as galactorrhea (breast nipple secretions) or symptoms of thyroid dysfunction (always tired or hyperactive)
- Past pregnancies, miscarriages, or abortions
- If she can detect ovulation through such symptoms as breast tenderness, midcycle "wetness", or one-sided lower abdominal pain (mittelschmerz)
- Breast examinations are best done after the menstruation
- Use of douches or intravaginal medications or sprays that could interfere with vaginal pH
- Menstrual history, including age of menarche, length, regularity, flow, and any difficulties the woman experiences such as dysmenorrhea or premature dysphoric disorder
- PDD- severe depression, irritability, and tension before menstruation
- >40 years old breast examination and pap smear is recommended

### Physical assessment

## ABO incompatibility

- Maternal blood type is O and the fetal blood type is either A or B blood type
- Hemolysis of the blood begins with birth, when blood and antibodies are exchanged during the mixing of maternal and fetal blood as the placenta is loosened; destruction may continue for as long as 2 weeks

## Pathophysiology

### Assessment

- Rh incompatibility may be predicted by finding a rising anti-Rh titer or a rising level of antibodies (indirect coombs test) in a woman during pregnancy
- Can be confirmed by detecting antibodies on the fetal erythrocytes in cord blood (positive direct coombs test) by percutaneous umbilical blood sampling
- Liver and spleen may be enlarged from the attempts to destroy damaged blood cells
- If number of RBCs has significantly decreased, blood in the vascular circulation may become hypotonic to interstitial fluid, causing fluid to shift from the lower to higher isotonic pressure by osmosis resulting to sever edema
- Severe anemia can result in heart failure as the heart has to beat at a faster rate than normal to push the diluted blood forward
- Hydrops fetalis- greek term that refers to a pathologic accumulation of at least to or more cavities with a collection of fluid in the fetus
- Normally, cord blood has a total serum bilirubin (TsB) level of 0-3/100 ml
- An increasing bilirubin level becomes dangerous if the level rises above 20 mg/dl in a term infant and perhaps as low as 12 mg/dl in a preterm infant because brain damage from bilirubin-induced neurologic dysfunction
- Kernicterus
- Hearing loss

## Therapeutic management

### Initiation of early feeding

- Bilirubin is removed from the body by being excreted through the feces
- The sooner the bowel elimination begins, the sooner bilirubin removal begins
- Early feeding (either breast milk or formula) stimulates bowel peristalsis

### Phototherapy

- Fetal liver processes little bilirubin in the utero because the mother's circulation does this for the fetus
- With birth, exposure to light is believed to trigger the liver to assume this function
- Phototherapy appears to speed the conversion of unconjugated (fat-soluble) into conjugated (water-soluble) bilirubin
- Phototherapy exposures the infant to continuous specialized light such as quartz halogen, cool white daylight, or special blue fluorescent light
- Lights are placed for only 12-30 minutes

### Exchange transfusion

- Use of intensive phototherapy in conjunction with hydration and close monitoring of serum bilirubin levels has greatly reduced the need for exchange transfusion

### Retinopathy of prematurity

- An acquired ocular disease that leads to partial or total blindness in children
- It is caused by the vasoconstriction of immature retinal blood vessels

- 25% of women in their reproductive years admitting to past or current marijuana use
- Short-term or long-term use effects on the exposed neonate, its risks are dose-dependent, with an increased incidence of intrauterine growth retardation and SIDS seen on infants

#### SEDATIVE/HYPNOTIC USE IN PREGNANCY

- Leads to physical dependency in fetus
- Associated with withdrawal include heroine/methadone, caffeine, cocaine, ethanol, marijuana, PCP, and nicotine
- Women using sedative/hypnotics during pregnancy may need to be hospitalized during detoxification because the risk for seizures and other central nervous system effect is relatively high

#### NARCOTIC ABUSE DURING PREGNANCY

- Associated with higher-than-normal incidence of premature labor, chorioamnionitis, SIDS, premature rupture of the membranes, and placental abruption
  - Heroin/methadone NURSING ASSESSMENT

#### PHYSICAL SIGNS

- Dilated or constricted pupils
- Inflamed oral mucosa
- Evidence of needle "trade marks" or abscesses
- Poor nutritional status
- Slurred speech or staggering gait
- Odor of alcohol in breath

#### BEHAVIORAL SIGNS

- Memory lapses, mood swings, hallucinations
- Pattern of frequently missed appointments
- Frequent accidents, falls
- Signs of agitation, depression, euphoria
- Suicidal gestures

#### PLANNING

The mother will:

- Identify the harmful effects of substances on herself and her infant
- Verbalize feelings related to continued use of harmful substances
- Identify personal strengths and accept resources offered by the health care delivery system to stop using drugs

#### IMPLEMENTATION ANTEPARTUM PERIOD

- Examining attitudes
- Preventing substance abuse
- Communicating with the woman
- Helping the woman identify strengths
- Promote ongoing care

#### INTRAPARTUM PERIOD

- Preventing injury
  - Setting limits
  - Initiating seizure precautions
- Maintaining effective communication
- Providing pain control

#### POSTPARTUM PERIOD

- Nursing care is focused on helping the mother with:
  - Bonding

### RISK FACTORS

- Increased maternal age
- Congenital structural defects
- Trauma to the cervix, such as might have occurred with a cone biopsy or repeated D&CS

### ASSESSMENT

- Positive history of repeated, relatively painless spontaneous second trimester abortions
- Serial pelvic exam and ultrasound

### PLANNING

- The woman will be able to explain incompetent cervix, treatment alternatives and implications for future childbearing
- The woman and her caregivers will be able to detect possible complications early and manage them properly

### IMPLEMENTATION

1. Nursing Management
  - o Reporting painless bleeding
  - o Encourage strict bedrest
  - o Sexual relations can be resumed in most instances after this rest period
  - o Health teaching in the possible complications of cerclage:
    - The amniotic membranes may rupture when the cerclage is placed
    - The uterus may become irritated, starting labor
    - The placenta or uterus may become infected
    - The cervix may be damaged if contractions tear the cerclage out
  - o After cerclage surgery, remain on bed rest (perhaps on a slight or modified Trendelenburg position) for a few days
2. Therapeutic Management Cervical cerclage
  - o As soon as a sonogram confirms that the fetus of a second pregnancy is healthy, at approximately weeks 12 to 14, purse-string sutures are placed in the cervix by the vaginal route under regional anesthesia
  - o McDonald or a Shirodkar – Barter technique
  - o A woman may not be eligible for a cerclage if:
    - There is increased irritation of the cervix
    - The cervix has dilated 4cm
    - Membranes have ruptured

### EVALUATION

#### Expected Outcomes:

- The woman understands the importance of contacting her physician immediately if her membranes rupture if labor begins
- The woman understands the means to prevent possible complications

### PREGNANCY INDUCED HYPERTENSION

- PIH is a condition in which VASOSPASM occurs during pregnancy in both large and small arteries
- A vascular disease of unknown cause which occurs anytime after the 24th week AOG up to 2 weeks post partum w/ triad of sx: HPN, proteinuria, & edema (extensive)
- Originally termed as TOXEMIA

- Arm dropping suddenly to the side
- Automatisms = complex purposeless movements, such as lip smacking or fumbling hand movements
- Slumps to the ground, unconscious
- Circumoral pallor may develop due to a halt in respirations
- Regains consciousness in less than 5 minutes
- Feel slightly drowsy afterward but does not have an actual postictal stage as in tonic-clonic seizures
- Common drugs:
  - o Carbamazepine (Tegretol)
  - o Valproic acid (Depakene)
  - o Phenytoin (Dilantin)
  - o Phenobarbital
- Carbamazepine can lead to neutropenia, so WBC counts need to be monitored during therapy = if not effective, surgery to remove the epileptogenic focus or the implantation of a vagus nerve stimulator can significantly reduce seizures frequency

#### *PARTIAL (FOCAL) – SEIZURE*

- With motor signs begins in the fingers and spreads to the wrist, arm, and face in a clonic contraction
- If movement remains localized = no loss of consciousness
- If the spread is extensive, becomes generalized and then is impossible to differentiate from a tonic-clonic seizure
  - o Numbness,
  - o Tingling,
  - o Paresthesia, or
  - o Pain originating in one area and spreading to other parts of the body
- Caused by a rapidly growing brain tumor
- Documenting the spread can help localize the spot on the brain that first initiated the abnormal electrical discharge

#### *ABSENCE SEIZURE*

- Formerly known as petit mal seizures, are classified as generalized seizures
- Consist of a staring spell that lasts for a few seconds
- Pauses and stares for 1 to 5 seconds before continuing the recitation; is unaware that time has passed
- Rhythmic blinking and twitching of the mouth or an extremity may accompany the staring
- Absence seizures can occur up to 100 times per day
- An EEG usually shows a typical 3-Hz wave and slow-wave discharge
- Such seizures tend to occur more frequently in girls than in boys. The usual age of occurrence is 6 to 7 years
- May be accused of daydreaming in school and may be referred to a school nurse
- Usually have normal intelligence; but if they have frequent episodes, they may be doing poorly on school because they are missing instructional content
- Demonstrated in children by asking them to hyperventilate and count out loud
- They will breathe in and out deeply, possibly 10 times, stop and stare for 3 seconds, then continue to hyperventilate and count, unaware they paused
- No first aid measures are necessary for absence seizures
- Controlled by:
  - o Ethosuximide (Zarontin)
  - o Sodium valproate
  - o Lamotrigine
- Children can participate in normal school activities and ride a bicycle or motorcycle but careful in crossing a busy street on the way to school or learning to drive
- Treatment is necessary during childhood = in order to keep the child safe and maintain self esteem
- With sensory signs:
- Usually occur independently of tonic-clonic seizures, although it is possible for a child to manifest

- Pain with intercourse. Pain during or after sex is common with endometriosis.
- Pain with bowel movements or urination. You're most likely to experience these symptoms during a menstrual period.
- Excessive bleeding. You may experience occasional heavy menstrual periods or bleeding between periods (intermenstrual bleeding).
- Infertility. Sometimes, endometriosis is first diagnosed in those seeking treatment for infertility.
- Other signs and symptoms. You may experience fatigue, diarrhea, constipation, bloating or nausea, especially during menstrual periods.

### Causes

- Retrograde Menstruation. In retrograde menstruation, menstrual blood containing endometrial cells flows back through the fallopian tubes and into the pelvic cavity instead of out of the body. These endometrial cells stick to the pelvic walls and surfaces of pelvic organs, where they grow and continue to thicken and bleed over the course of each menstrual cycle.
- Transformation of peritoneal cells. In what's known as the "induction theory", experts propose that hormones or immune factors promote transformation of peritoneal cells - cells that line the inner side of your abdomen - into endometrial - like cells.
- Embryonic cell transformation. Hormones such as estrogen may be transform embryonic cells - cells in the earliest stages of development - into endometrial - like cell implants during puberty.
- Surgical scar implantation. After a surgery, such as a hysterectomy or C-Section, endometrial cells may attach to a surgical incision.
- Endometrial cell transport. The blood vessels or tissue fluid (lymphatic) system may transport endometrial cells to other parts of the body.
- Immune system disorder. A problem with the immune system may take the body unable to recognize and destroy endometrial like tissue that's growing outside the uterus.

### PEDIA

### FINALS

#### PROBLEMS OF THE PASSENGER

##### PROLAPSED UMBILICAL CORD

- A loop of the umbilical cord slips down in front of the presenting fetal part
- Always an emergency solution, because the reduced blood flow to the fetus can quickly cause fetal harm
- Dangerous because it can lead to hypoxia that might result to stillbirth

Most likely to occur in:

- Premature rupture of membranes
- Fetal presentation other than cephalic
- Placenta previa
- Intrauterine tumors preventing the present part from engaging
- A small fetus
- CPD preventing firm engagement
- Hydramnios
- Multiple gestation

##### ASSESSMENT

- Ultrasound
- CS is necessary before rupture of the membranes occurs cause the cord to slide down into the vagina from the pressure exerted by the amniotic fluid

**TABLE 52.8 \* Comparing Open and Closed Burn Therapy**

Method	Description	Advantages	Disadvantages
Open	Burn is exposed to air; used for superficial burns or body parts that are prone to infection, such as perineum	Allows frequent inspection of site; allows child to follow healing process	Requires strict isolation to prevent infection; area may scrape and bleed easily and impede healing
Closed	Burn is covered with non-adherent gauze; used for moderate and severe burns	Provides better protection from injury; is easier to turn and position child; allows child more freedom to play	Requires dressing changes that are painful; possibility of infection may increase because of dark, moist environment

**TABLE 52.5 \* Classification of Burns**

Classification	Description
Minor	First-degree burn or second-degree burn <10% of body surface or third-degree burn <2% of body surface; no area of the face, feet, hands, or genitalia burned
Moderate	Second-degree burn between 10% to 20% or on the face, hands, feet, or genitalia or third-degree burn <10% of body surface or if smoke inhalation has occurred
Severe	Second-degree burn >20% of body surface or third-degree burn >10% of body surface

- **SENSITIZATION** – process in which the mother's body will try to fight them off by producing antibodies against them.
- If the father of the child is homozygous for the factor, 100% of the couple's children will be Rh-positive
- If the father is heterozygous for the trait, 50% of their children can be expected to be Rh-positive
- Occurs when an Rh negative mother carries a fetus with an Rh positive blood type with the father of the child must either be homozygous or heterozygous Rh - positive.
- Because people who have Rh - positive have a protein factor (the D antigen) & that Rh-negative people do not, when an Rh-positive fetus begins to grow inside an Rh- negative mother who is sensitised, it is as though her body is being invaded by a foreign agent.

### Rh incompatibility during pregnancy

- Because people who have Rh-positive blood have a protein factor (The D antigen) and that Rh-negative people do not, when an Rh-positive fetus begins to grow inside an Rh-negative mother who is sensitized, it is as though her body is being invaded by a foreign agent
- mother & fetus have different Rh protein factors
- **Rh disease:** condition where antibodies in a pregnant woman's blood destroys her baby's blood
- This occurs when Rh (-) mother carries
- Rh factor exists as portion of RBC, So maternal antibodies cross the placenta and cause RBC destruction (hemolysis) of fetal RBC
- Fetus can be deficient in RBC that sufficient O<sub>2</sub> transport to bodily cells cannot be maintained =
- Hemolytic disease of the newborn or **erythroblastosis fetalis**
- No connection between fetal blood and maternal blood during pregnancy so the mother should not be exposed to fetal blood.
- Villus rupture, allowing a drop of fetal blood to enter the maternal circulation = amniocentesis or percutaneous umbilical blood sampling.
- During a first pregnancy this effect is small
- Most of the maternal antibodies formed against the Rh positive blood are not formed during pregnancy but in the first 72 hours after birth, making them a threat to second pregnancy.

### Assessment

- Rh - negative blood have an anti - D antibody titer done at a first pregnancy visit
- Results are normal or the titer is minimal (normal is 0; a ratio below 1:8 is minimal), the test will be repeated at week 28 of pregnancy, if normal, no therapy is needed.
- **Woman's anti-D** antibody titer is elevated at a first assessment (1:16 or greater), showing Rh sensitization = the fetus in this potentially toxic environment will be monitored every 2 weeks for more often by Doppler velocity of the fetal middle cerebral artery, a technique that can predict when anemia is present or fetal red cells are being destroyed
- Artery velocity remains high, a fetus is not developing anemia and is an Rh- negative fetus
- If it is low = fetus is in danger, and immediate birth will be carried out providing the fetus is near term

### Symptoms

- After birth, the infant:
  - Jaundice
  - Low muscle tone (hypotonia)
  - Lethargy
  - Swelling/edema
- Therapeutic Management



- May be characterized by opisthotonus
- Hyperarching of the back
- May be corrected through placing shunts
- EV shunt- extraventricular shunt- shunt leading outside the ventricles to drain excess CSF
- Atrioventricular peritoneal shunt- draining CSF through the peritoneum
- Drainage should be below or at the level of the brain
- Manifested by setting-sun eyes due to pressure in the periaqueductal gray
- Difficulty in breathing due to pressure of the brain stem (medulla oblongata) that controls the breathing
- Fontanelles remain open to cater the CSF that is not being drained

#### Intussusception

- Pathognomonic signs- sausage-shaped mass
- May be diagnosed through x-ray and ultrasound
- Manifestations- vomitus and stool
- Due to telescoping of small intestines stomach will not be able to empty= projectile vomiting due to blockage
- Currant jelly stools
- Management
- Air or barium enema, if cannot be treated through it, exploratory laparotomy
- Bilious vomitus (vomit with bile)- due to decrease in nutrition= brain will signal liver= increased production of bile
- Medication- metronidazole (anti-protozoal)

#### Nephrotic vs Nephritic

##### Nephrotic

- Autoimmune disorder
- It widens the glomerular
- Supposedly glomerular should only have enough holes, too much holes will not be able to filter well
- Protein (albumin) will not go back to the system= massive proteinuria
- Albumin controls the osmotic pressure inside the intravascular space
- Decrease in albumin will cause osmosis= localized edema
- Decreased proteins= compensation of the liver (will use fats instead of protein) = increase in lipids= hyperlipidemia

##### Nephritic or acute glomerulonephritis

- Inflammation of the kidneys
- Cause by GABHS (group a beta-hemolytic streptococcus)
- Pathognomonic sign- swelling/ inflammation of glomerulus, and cola-colored urine (blood-tinged urine)
- Impedes function of the glomerular
- Destruction of the glomerulus/ lining
- N- No urine (oliguria)
- E- Edema
- P- Pallor
- Kidneys produces erythropoietin= stimulates bone marrows to produce RBCs
- H- Hypertension
- R- Red-colored urine
- I- Increased USG (urine specific gravity)
- Concentrated urine
- T- Tenderness in the flank area