

Assessment of Pregnancy and Estimating Date of Delivery

Dr. Gary Mumaugh – Physical Assessment

Normal Pregnancy

- The possibility of pregnancy must be considered in every woman of reproductive age regardless of the chief complaints!!!!
- A study showed that 7% of women who stated there was no chance of pregnancy and had normal on-time last menstrual periods were pregnant.
- Barrier method use, contraceptives, and tubal sterilization does not guarantee pregnancy prevention!!

Terminology

- Gravidity
 - Total # of pregnancies regardless of duration or outcome.
- Parity
 - # of pregnancies completed to delivery during viable period.
- G#P# (Full term-Preterm-Aborted-Living)
 - G3P2 (2-0-1-2)
- Duration= 40 weeks (calculated from first day of last menstrual period)
- 3 Trimesters of Equal Length
 - 1st- Conception to 14 weeks
 - 2nd- 14-28 weeks
 - 3rd- 28-42 weeks
- Term pregnancy requires completion of at least 37 weeks.

Physiology Changes

- Cardiovascular
 - 40-45% increase circulating blood volume
 - 43% increase in CO
 - 17% increase in resting HR
 - 20% increase in SVR
 - Decrease BP
 - Increase of diaphragm displaces heart
- Respiratory
 - Dyspnea common complaint
 - Hormone-induced 40% increase in tidal volume
 - pCO₂ decrease (Pregnancy value 30mmHg)
 - Functional residual capacity decrease b/c of increase of diaphragm
- GI
 - Gastric reflux 2^o to delayed gastric emptying, decrease intestinal motility, and decrease lower esophageal sphincter tone.
 - Gallbladder emptying delayed and less efficient causing increased risk of cholesterol stone formation.

Physiology Changes

- GU
 - Increase renal blood flow
 - Increase kidney size
 - Increase GFR (up to 50% by 2nd trimester) results in decreased BUN/Creatinine
- Hematopoietic
 - 40-45% increase circulating blood volume 2^o to increase plasma volume and # of erythrocytes
 - HgB conc. Decreases 2^o to dilutional intravascular volume but should not decrease below 11g/dL
- Hematopoietic
 - High Fe requirements
 - Reticulocyte count increase 2nd half of preg.
 - Leukocyte counts range 5000-12000 cells/ μ L
 - Leukocyte function decreases 2nd trimester so increases susceptibility to infection
 - Increase coagulation factors
 - Increase ESR
 - Slight decrease platelets
- Endocrine
 - Hyperinsulinemia and fasting hypoglycemia 2^o to changes in carbohydrate metabolism
 - Postprandial hyperglycemia 2^o to altered response to glucose ingestion.
 - Thyroid with increase vascularity and mild hyperplasia but clinically detectable goiter is not normal. (Free thyroxine and TSH to assess thyroid function during pregnancy)
- Uterus
 - Increase uterine weight (70 - 1100g)
 - Increase intrauterine volume (10 - 5000mL)
 - 12 weeks uterus expands into abdominal cavity
- Breasts
 - Breast tenderness and tingling starting in 1st trimester
 - Breasts enlarge
 - Nipple size increase
 - Increase pigmentation

Assessment of Intrauterine Pregnancy - Presumptive Changes

- Amenorrhea - often the earliest symptom of pregnancy
- Nausea and vomiting (morning sickness)
 - Experienced by almost half of all pregnant women
 - Occurs during first 3 months of pregnancy
- Urinary frequency - enlarging uterus exerts pressure on the bladder
- Assessment of Intrauterine Pregnancy-Presumptive Changes

Assessment of Intrauterine Pregnancy - Presumptive Changes

- Excessive fatigue--may persist throughout the first trimester
- Change in breasts--engorgement, tenderness, tingling, darkening of the nipple area
- Quickening - mother's perception of fetal movement
 - 18 to 20 weeks after LMP
 - 16 weeks in multigravidas

Changes in the Pelvic Organs

- Goodell's sign
 - Softening of the cervix caused by increased vascular congestion
 - Slight uterine enlargement on pelvic exam
 - The only physical signs detectable within the first three months of pregnancy
- Chadwick's sign
 - The deep red to purple or bluish coloration of the mucous membranes
 - The cervix, vagina and vulva involved
 - Due to increased vasocongestion of the pelvic vessels
- Enlargement of the abdomen - uterus enlargement on pelvic exam
- Braxton Hicks contractions
 - Are painless contractions that occur at regular intervals throughout pregnancy but are
 - Felt more commonly after 28 weeks
 - Also known as false labor

Changes in Skin

- Abdominal striae--stretch marks
- Facial chloasma - after 16 weeks
- Nipples and areola -- may darken especially in primigravidas and darkhaired women
- Linea nigra - pigmented line of the abdomen may develop

Fetal Outline

- Identified by palpation in many pregnant women after 24 weeks of gestation
- Ballottement
 - Passive fetal movement elicited by tapping the cervix with two fingers
 - This pushes the fetal body up, and as it falls back, the examiner feels rebound

Pregnancy Tests

- Urine Test
 - First urine specimen in AM (midstream) - not necessary, but preferred if tested early
 - Approximately 95% accurate
 - 10 to 14 days after first missed menstrual period
 - More accurate now - can detect pregnancy around time of missed period

Pregnancy Tests

- Blood test
 - Most accurate pregnancy test
 - Few days after presumed implantation
 - Can be used in diagnosis of ectopic pregnancy or Trophoblastic disease
- Over-the-counter pregnancy tests
 - Performed on urine
 - False positive rate - approximately 5%
 - False negative rate - approximately 10%
 - Must follow instructions carefully

Positive changes

- Positive signs of pregnancy are completely objective
- Usually not present until the fourth month of pregnancy
- Palpation of fundus of uterus
 - 12 weeks - Symphysis pubis
 - 16 weeks - Midway between symphysis pubis and umbilicus
 - 20 weeks- Umbilicus
 - 20-32 weeks- increase 1 cm above umbilicus for every increase 1 week
- Fetal Heartbeat
 - Detected with a fetoscope by approximately week 17 to 20 of pregnancy
- Fetal Heart Rate
 - Between 120 and 160 beat/min
- Fetal movement
 - Palpable by a trained examiner after about 18 weeks of pregnancy
 - Faint flutter in early pregnancy
 - Vigorous movement later in pregnancy
 - Fetal electrocardiographic evidence -- recorded as early as 84 days of pregnancy
 - Ultrasound -- positive diagnosis as early as the sixth week of pregnancy

Estimated Date of Confinement (EDC)

- Gestation

- Approximately 9 1/3 calendar months or 40 weeks + 2 1/2 weeks from (LMP) last menstrual period
- Nagele's Rule
 - Most common method of determining the EDD
 - Begin with the first day of the last menstrual period (LMP)
 - Subtract three months and add seven days



ESTIMATING DATE OF DELIVERY	
Date LMP	3-15-2007
Subtract 3 Months	- 3
	= 12-15-2006
Add 7 Days & 1 year	+ 7 1
EDD	= 12-22-2007

Guidelines for Maternal Health

- Meals should not be avoided - the fetus is nourished by what is consumed
- Regular, well-balanced meals should be eaten
- Eat frequent, small meals if upset stomach is a problem in early months
- Foods high in protein, minerals, and vitamins should be consumed
- High salt intake should be avoided
- Smoking should be avoided - affects heart rate, blood pressure, and cardiac output of both the mother and fetus
- Alcohol should be avoided - may affect mental and physical development of the fetus
- Medications other than those prescribed by a doctor or medic should not be taken
- The need for vitamin is increased A, B, C, and D
- Iron supplements may be indicated for patients with a history of anemia, multiple births, or frequent pregnancies.

