MORIA ONORIODE
18/MHS02/160
NURSING

ASSIGNMENT

Elucidate the physiological adaptations of the female to pregnancy

During pregnancy they are noticeable changes in the the female body which can be visible and not visible. These are some physiological changes in the female body during pregnancy;

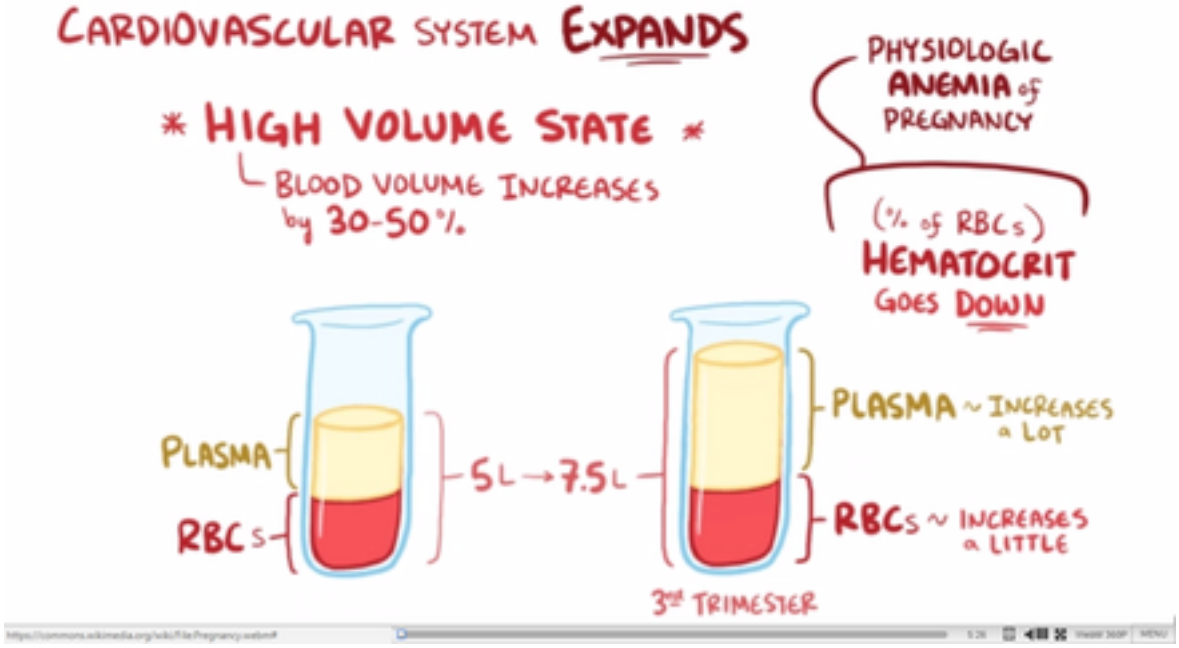
Hormonal change;Pregnant women experience numerous adjustments in their endocrine system that help support the developing fetus. The fetal-placental unit secretes steroid hormones and proteins that alter the function of various maternal endocrine glands. Sometimes, the changes in certain hormone levels and their effects on their target organs can lead to gestational diabetes and gestational hypertension.Pituitary gland, the pituitary gland grows by about one-third as a result of hyperplasia of the lactrotrophs in response to the high plasma estrogen. The thyroid gland enlarges and may be more easily felt during the first trimester. The increase in kidney clearance during pregnancy causes more iodide to be excreted and causes relative iodine deficiency and as a result an increase in thyroid size. Adrenal and Parathyroid glands are slightly enlarged. There increased secretion of erythropoietin, B cell hyperplasia in the pancreas which can bring about increased insulin secretion and cortisol secretion can lead pregnancy to be diabetobenic state.

Cardiovascular;The heart adapts to the increased cardiac demand that occurs during pregnancy in many ways.

- Cardiac output (Lit./Min.): 6.26
- Stoke Volume (Ml.): 75
- Heart Rate (Per min.): 85
- Blood Pressure: Unaffected

Cardiac output increases throughout early pregnancy, and peaks in the third trimester, usually to 30-50% above baseline. Estrogen mediates this rise in cardiac output by increasing the pre-load and stroke volume, mainly via a higher overall blood volume (which increases by 40–50%),the heart rate increases. The systolic and diastolic blood pressure drops 10–15 mm Hg in the first trimester and then returns to baseline in the second half of pregnancy.[5] All of these cardiovascular adaptations can lead to common complaints, such as palpitations, decreased exercise tolerance, and dizziness.

Blood volume and hemoglobin concentration



Maternal Blood Volume

During pregnancy the plasma volume increases by 40-50% and the red blood cell volume increases only by 20–30%.These changes occur mostly in the second trimester and prior to 32 weeks gestation. Erythropoietin, which stimulates red blood cell production, increases throughout pregnancy and reaches approximately 150 percent of their pregnancy levels at term.The slight drop in hematocrit or hemoglobin is most pronounced at the end of the second trimester and slowly improves when reaching term. Edema, or swelling, of the feet is common during pregnancy, partly because the enlarging uterus compresses veins and lymphatic drainage from the legs.

Renal and lower reproductive tract

Progesterone causes many changes to the genitourinary system. A pregnant woman may experience an increase in the size of the kidneys and ureter due to the increase blood volume and vasculature. Later in pregnancy, the woman might develop physiological hydronephrosis and hydroureter, which are normal.Progesterone causes vasodilatation and increased blood flow to the kidneys, and as a result glomerular filtration rate (GFR) commonly increases by 50%, returning to normal around 20 weeks postpartum.The increased GFR increases the excretion of protein, albumin, and glucose. The increased GFR leads to increased urinary output, which the woman may experience as increased urinary frequency. Progesterone also causes decreased motility of the ureters, which can lead to stasis of the urine and hence an increased risk of urinary tract infection.

Changes in the gastrointestinal (GI) system during pregnancy are caused by the enlarging uterus and hormonal changes of pregnancy. Anatomically, the intestine and stomach are pushed up from their original positions by the enlarging uterus. While there aren't any intrinsic changes in the sizes of the GI organs, the portal vein increases in size due to the hyperdynamic state of pregnancy. Elevated levels of progesterone and estrogen mediate most of the functional changes of the GI system during pregnancy. Progesterone causes smooth muscle relaxation which slows down GI motility and decreases lower esophageal sphincter (LES) tone. Nausea and vomiting of pregnancy, commonly known as “morning sickness”, is one of the most common GI symptoms of pregnancy.Constipation is another GI symptom that is commonly encountered during pregnancy. It is associated with the narrowing of the colon as it gets pushed by the growing uterus found adjacent it leading to mechanical blockade. Reduced motility in the entire GI system as well as increased absorption of water during pregnancy are thought to be contributing factors.