

PHYSIOLOGICAL CHANGES IN PREGNANCY.

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Abstract: This article is about pregnancy, which happens after you start a family. The changes that occur during pregnancy and their effects on the female body are highlighted.

Keywords: Pregnancy, family, child, womb, mother and child, body, fertilization, embryo, zygote

About: FARS Publishers has been established with the aim of spreading quality scientific information to the research community throughout the universe. Open Access process eliminates the barriers associated with the older publication models, thus matching up with the rapidity of the twenty-first century.

HOMILADORLIKDA FIZIOLOGIK O'ZGARISHLAR

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Abstract: Ushbu maqola voyaga yetib oila qurgandan so'ng uchraydigan hodisa bu homiladorlik haqida. Homiladorlikda ro'y beradigan o'zgarishlar va ayollar organizmiga ta'siri yoritilgan.

Keywords: Homiladorlik, oila, bola, bachadon, ona va bola, tana, urug'lanish, embrion, zigota..

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Physiology of pregnancy and fertilization. The first sign of pregnancy and the reason why most pregnant women initially consult a doctor is the lack of menstruation. For sexually active women of reproductive age and regular menstruation, a delay of 1 week is an approximate evidence of pregnancy.

Pregnancy is continuous 266 days from conception. If menstruation occurs regularly every 28 days, 280 days from the first day of the last period. The delivery date is calculated based on the last menstrual period. Delivery 2 weeks before or after the due date is normal. Birth before 37 weeks of pregnancy is considered premature. Birth after 42 weeks of pregnancy is considered postterm.

The heart is a blood vessel

Cardiac output (CO) increases by 30-50% beginning at 6 weeks of gestation and peaks at 16-28 weeks (usually around 24 weeks). After 30 weeks, it remains close to the maximum level. Then CO is sensitive to body position. Positions (such as the sitting position) that most prevent the uterus from dilating and relaxing the

cavity will cause the CO to decrease the most. On average, CO usually decreases slightly from 30 weeks until labor begins. CO increases by another 30% during labor. After birth, the uterus shrinks and CO decreases rapidly, to 15-25% of the norm, then gradually decreases (mainly in the next 3-4 weeks) and reaches the level of pregnancy at 6 weeks postpartum. The increase in CO during pregnancy is mainly due to the demand of the uteroplacental circulation; the volume of uteroplacental blood circulation increases significantly, and blood circulation in the interstitial space partially acts as an arteriovenous shunt. As the placenta and fetus develop, blood flow to the uterus should increase to about 1 L/min per minute (20% of normal CO). The increased need for skin (to regulate temperature) and kidneys (to excrete fetal waste) accounts for some of the CO. To increase CO, heart rate increases 70 to 90 times normal and stroke volume increases. In the second trimester, blood pressure (BP) usually decreases (and pulse pressure increases), although CO and renin and angiotensin levels increase, as the uteroplacental circulation expands (the space between the placenta develops) and systemic vascular resistance decreases. Resistance decreases because blood viscosity and sensitivity to angiotensin decreases. In the third trimester, blood pressure can return to normal. In twins, CO increases more and diastolic blood pressure is lower at 20 weeks than in singletons. Physical exercise increases CO, heart rate, oxygen consumption, and respiratory volume more than any other minute. The hyperdynamic cycle of pregnancy increases the frequency of functional noises and emphasizes heart sounds. X-ray or EKG can show that the heart moves horizontally, turns to the left, and increases its transverse diameter. Atrial and ventricular premature beats are common during pregnancy. All of these changes are normal and should not be misdiagnosed as heart disease; usually they can only be managed with confidence. However, paroxysms of atrial tachycardia are more common in pregnant women and may require prophylactic digitization or other antiarrhythmic drugs. Pregnancy does not affect the performance or safety of cardioversion.

Hematological

The total amount of blood increases proportionally with cardiac output, but the increase in plasma volume is greater (about 50%, usually about 5200 ml than about 1600 ml) compared to the mass of red blood cells (erythrocytes) (about 25%). ; Thus, hemoglobin (Hb) is reduced by dilution to approximately 13.3 to 12.1 g/dL. This dilutional anemia reduces blood viscosity. With twins, the total blood volume of the mother increases more (about 60%). The white blood cell (WBC) count is slightly elevated, ranging from 9,000 to 12,000/ μ l. Marked leukocytosis (\geq 20,000/mcL) occurs during delivery and in the first days after delivery. During pregnancy, the need for iron increases by 1 g, and in the second half of pregnancy -

6-7 mg/day. About 300 mg of iron is used by the fetus and placenta, and the increase in the mother's erythrocyte mass requires an additional 500 mg. The yield is 200 mg. Iron supplementation is needed to prevent further decline in Hb levels, as the amount absorbed from the diet and recruited from iron stores (average 300 to 500 mg) usually does not meet the requirements of pregnancy.

Passing urine

Changes in kidney function are almost similar to heart function. The glomerular filtration rate (GFR) increases by 30-50%, reaches 16-24 weeks of pregnancy and remains almost until this period, it may decrease slightly, because the pressure of the uterus on the vena cava often causes venous stagnation in the lower extremities. Renal plasma flow increases in proportion to GFR. As a result, the blood urea nitrogen (BUN) is reduced, usually 10 mg/dL (3.6 mmol urea/L), and the creatinine level is proportionally reduced to 0.5 - 0.7 mg/dL (44 - 62 micromol/L). . The reason for the expansion of the ureters (hydronephrosis) is hormonal effects (mainly progesterone) and backup of the bladder due to the pressure of the enlarged uterus, which can also lead to hydronephrosis. After giving birth, it can take up to 12 weeks for the urinary system to return to normal.

Postural changes affect kidney function more than other periods; that is, the lying position increases the kidney function more and the standing position decreases the kidney function. Kidney function also increases significantly in the lateral position, especially when lying on the left side; this position relieves the pressure that the enlarged uterus puts on the large vessels when pregnant women lie down. Positional increase in kidney function causes pregnant women to urinate more often while trying to sleep.

Breathing

Lung function changes partly due to increased progesterone and partly due to the enlarging uterus interfering with lung expansion. Progesterone signals the brain to lower carbon dioxide (CO₂) levels. Tidal and minute volume and respiratory rate increase to lower CO₂ levels, thus increasing plasma pH. Oxygen consumption increases by about 20% to meet the metabolic needs of the fetus, placenta, and several maternal organs. Inspiratory and expiratory reserve, residual volume and capacity, and plasma PCO₂ decrease. Vital capacity and plasma PCO₂ do not change. The chest circumference increases by about 10 cm.

Significant hyperemia and edema appear in the respiratory tract. Sometimes there is symptomatic obstruction of the nasopharynx and nasal congestion, the eustachian tubes are temporarily blocked, the tone and quality of the voice change.

Shortness of breath is common during exercise and deep breathing is common.

Gastrointestinal (GI) and hepatobiliary

As pregnancy progresses, pressure from the enlarged uterus on the lower part of the rectum and colon can cause constipation. GI motility decreases as increased progesterone levels relax smooth muscle. Heartburn and belching are common, probably due to delayed gastric emptying and gastroesophageal reflux due to relaxation of the lower esophageal sphincter and diaphragmatic hiatus. Hydrochloric acid production is reduced; Thus, peptic ulcer disease is rare during pregnancy, and pre-existing ulcers are often aggravated.

The number of gallbladder diseases increases slightly. Pregnancy affects liver function, especially bile. Normal indicators of liver function tests are normal, except for the level of alkaline phosphatase, which gradually increases in the 3rd trimester and can be 2-3 times more than the term; the increase is due to placental production of this enzyme rather than liver dysfunction.

Pregnancy changes the function of most endocrine glands, partly because hormones are produced in the placenta and partly because hormones bind to protein, and protein binding increases during pregnancy.

The placenta produces the beta subunit of human chorionic gonadotropin (beta-hCG), a trophic hormone that, like follicle-stimulating and luteinizing hormones, maintains the corpus luteum and thus prevents ovulation. Estrogen and progesterone levels rise during pregnancy as beta-hCG stimulates continued ovarian production. After 9-10 weeks of pregnancy, the placenta itself produces large amounts of estrogen and progesterone to maintain the pregnancy.

The placenta produces thyroid-stimulating hormone (similar to thyroid-stimulating hormone), which causes hyperplasia, increased vascularity, and moderate enlargement. Estrogen stimulates hepatocytes, increases the level of thyroid-binding globulin; Thus, although total thyroxine may increase, free thyroid hormone levels remain normal. The effect of thyroid hormones increases and resembles hyperthyroidism with tachycardia, palpitations, excessive sweating and emotional instability. But true hyperthyroidism occurs in only 0.08% of pregnancies.

Corticotropin-releasing hormone (CRH) is produced in the placenta, which stimulates the mother's production of adrenocorticotrophic hormone (ACTH). Increased levels of ACTH increase levels of adrenal hormones, especially aldosterone and cortisol, thereby promoting edema.

Increased corticosteroid production and increased placental production of progesterone lead to insulin resistance and increased insulin requirements, pregnancy stress, and possibly increased human placental lactogen. Insulinase produced by the placenta can also increase the demand for insulin, so many women with gestational diabetes develop overt diabetes.

The placenta produces melanocyte-stimulating hormone (MSH), which increases skin pigmentation at the end of pregnancy.

The pituitary gland enlarges by approximately 135% during pregnancy. The level of prolactin in maternal plasma increases 10 times. An increase in prolactin is associated with an increase in the production of thyrotropin-releasing hormones under the influence of estrogen. The main function of increased prolactin is to ensure lactation. This level returns to normal after delivery, even in women who are breastfeeding.

Dermatological.

Increased levels of estrogens, progesterone, and MSH contribute to pigmentary changes, although the exact pathogenesis is unknown. This includes changes. Melasma (mask of pregnancy), which is a dark brown pigment on the forehead and forehead.

Darkening of the mammary glands, armpits and genitals

Linea nigra, a dark line appears on the middle joints

Melasma due to pregnancy usually recedes within a year.

During pregnancy, spider angiomas, usually only above the waist and thin-walled, dilated capillaries, especially on the lower legs, proliferate.

Signs and symptoms of pregnancy

Pregnancy can cause breast engorgement due to increased levels of estrogen (primarily) and progesterone—the premenstrual increase in breast size. 10 days after fertilization, nausea and sometimes vomiting may occur due to an increase in the production of estrogen and the beta-subunit of human chorionic gonadotropin (beta-hCG) by the syncytiotrophoblastic cells of the placenta (see "Conception and Prenatal Development"). The corpus luteum of the ovary, stimulated by beta-hCG, continues to secrete large amounts of estrogen and progesterone to maintain the pregnancy. At this time, many women feel tired, and some women notice the swelling of the abdomen very early.

Women usually begin to feel fetal movement between 16 and 20 weeks.

In the late period of pregnancy, swelling of the lower extremities and varicose veins are observed; the main reason is the compression of the inferior vena cava by the enlargement of the uterus.

Pelvic exam findings include a softer cervix and an irregularly softened, enlarged uterus. The cervix usually turns bluish-purple, possibly due to increased blood supply to the uterus. At 12 weeks of pregnancy, the uterus extends above the true pelvis into the abdominal cavity; reaches the navel in the 20th week; and at 36 weeks, the upper pole almost reaches the hypoid process.

Diagnosis of pregnancy
Beta-hCG test in urine

Urine and occasionally blood tests are usually used to confirm or rule out pregnancy; Results are usually evident a few days before menstruation and often a few days after conception.

Other accepted signs of pregnancy include:

The presence of a gestational sac in the uterus, which is usually detected by ultrasound at 4 to 5 weeks and usually has a serum beta-hCG level of 1500 mIU/ml)

Fetal heart activity, 5 to 6 weeks in real-time ultrasound

Fetal heart sounds can be heard at 8-10 weeks using Doppler ultrasound if the uterus can be accessed through the abdomen.

Fetal movements are felt by the examining physician after 20 weeks

"Meeting" occurs when the egg and male sperm meet in the fallopian tubes. After their successful fusion, a new element is formed - zygote. The beginning of this development has already made a new person. Fertilized - this time the zygote is born. This period is a pregnant woman, she will be. process, then the active crushing of the zygote begins. The cage gradually increases in size and turns into an embryo.

On the fifth day of their life, the zygote turns into a blastocyst. For some time after fertilization, the embryo floats freely in the fallopian tubes looking for a point for attachment. task section will be stage, then. At this time, the restructuring of the body begins, and the woman clearly feels the first signs of fertilization.

The beginning of pregnancy is an important period in the life of every expectant mother. any disorder in the body, malnutrition or alcohol abuse can affect the development of the fetus. Soon a woman will learn a new role, well.

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