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COLLEGE: MEDICINE AND HEALTH SCIENCES

DEPARTMENT: PHARMACOLOGY

COURSE CODE: PHS 212

COURSE TITLE: RENAL PHYSIOLOGY, BODY FLUID & TEMPERATURE REGULATION AND AUTONOMIC NERVOUS SYSTEM.

DATE: 27TH APRIL 2020 – 1ST MAY 2020

ASSIGNMENT:

- BRIEFLY DISCUSS THE CYCLIC CHANGES IN ANY TWO OF THE FOLLOWING

(a) Cervix

(b) Vagina

(c) Breast

- EXPLICATE ANY ONE THE FOLLOWING:

  (a) Menstrual cycle

  (b) Hormonal regulation of the menstrual cycle

CYCLIC CHANGES IN THE BREAST

Breast development is a vital part of a woman's reproduction. Breast development happens in stages: first before birth, at puberty and later during childbearing years. Changes also happens to the breast during the menstrual cycle and when a woman reaches menopause. Every month, women go through hormonal changes which makes the menstrual cycle. During the first half of the menstrual cycle, the hormone estrogen is produced and it stimulates the growth of milk ducts in the breast. Progesterone takes over the second half of the menstrual cycle, it is responsible for stimulating the formation of the milk glands. The estrogen and progesterone are responsible for the cyclical changes that many women feel in the breast just before menstruation. The changes include changes in texture, swelling, pain, sores. The breast being lumpy is caused by the enlargement of the glands in the breast for it to get ready for possible pregnancy. If pregnancy does not happen, the breast goes back to it's normal size. Once menstruation starts, the cycle begins again.

CYCLIC CHANGES IN CERVIX

The cervix changes position many times through out the menstrual cycle for example; the cervix may rise along side ovulation to prepare for conception or lower to allow menstrual tissue to pass through the vagina. Each change in the position is tied to a particular phase in your menstrual cycle or other hormonal changes such as pregnancy.

Cervix characteristics during follicular phase: During the follicular phase, the body is preparing the uterine lining for a fertilized egg to attach. The

cervix feels firmer due to low estrogen level. Estrogen will malke it feel softer as your menstrual cycle progesses.

Cervix characteristics during ovulation phase: During ovulation, the estrogen level starts to rise. This causes the uterine lining to thicken making it feel softer. More mucus begins to come from the cervix and vagina at this phase. The mucus has a thin slippery consistency.

Cervix characteristics during luteal phase: During the luteal phase, the estrogen level decreases but progesterone remains to keep the uterine lining thick awaiting an implantation of a fertilized egg. The cervix will still be soft and this cervical mucus will be thicker, sticky and cloudy in appearance.

Cervix characteristics during menstruation: The cervix is typically open during menstruation which allows menstrual blood and uterine tissues to leave the body. The cervix is usually lower in body and therefore easier to feel while you're menstruating.

HORMONAL REGULATION OF THE MENSTUAL CYCLE

The menstrual cycle is regulated by a complex hormone system. Regulation is to a great extent affected by the pituitary gland in response to changes in ovarian steroid levels. Changes in ovarian steroid level is due to regulatory changes in receptivity to pituitary hormones as well as the variation in enzymes activities, at the peripheral, changes in the hormonal impact are accompanied by modification of the receptivity of steroid hormones. The menstrual cycle is regulated by hormones; luteinising hormone(LH) and follicle stimulating hormone(FSH) which are produced by the pituitary gland. They promote ovulation and stimulates the ovaries to

produce estrogen and progesterone. The estrogen and progesterone stimulates the uterus and breast to prepare for possible fertilization. The menstrual cycle has three phases: the follicular phase, the ovulation phase and luteal phase.

The menstrual cycle begins with menstrual bleeding which marks the first day of follicular phase. As the follicular phase begins, the levels of estrogen and progesterone are low. As a result, the top layers of the thickened lining of the uterus breaks down and are shed and the menstrual bleeding occurs. About this time the follicle stimulating hormone level increases slightly, stimulating the development of several follicle in the ovaries. Each follicle contains an egg. Later in this phase as the follicle stimulating hormones level decreases, only one follicle continues to develop. The follicle produces estrogen.

The ovulatory phase: it begins with a surge in luteinizing hormone and follicles stimulating hormone levels. Luteinizing hormone stimulates egg release which usually occurs at the 16 to 32 hours after the beginning of the surge. The estrogen level decreases after the surge and the progesterone level starts to increase.

Luteal phase: the level of luteinizing hormone and the follicle stimulating hormone decrease. The ruptured follicle decreases after releasing the egg and forms a corpus luteum which produces progesterone. During this phase, the estrogen level is high. Progesterone and estrogen causes the lining of the uterus to thicken more to prepare for possible fertilization. Then the corpus luteum degenerates and no longer produces the progesterone, the estrogen level also decreases. The top layer of the lining breaks down and shed and menstrual bleeding occurs. If the egg is

fertilized, the corpus luteum continues to function during early pregnancy. It helps maintain the pregnancy.