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**MATRIC NO: 18/MHS07/003**

**Assignment Title:** Female reproductive physiology

**Course Title:** Renal Physiology, Body fluid & Temperature Regulation and Autonomic Nervous System

**Course Code:** PHS 212

**Question**

1.) Briefly discuss the CYCLIC CHANGES in any two of the following:

a) CERVIX (b) VAGINA (c) BREASTS

2.) Explicate any one of the following:

a) Menstrual cycle

b) Hormonal regulation of the menstrual cycle

**Answers**

1.a) Cyclic changes in the cervical mucus:

* Under the influence of estrogen, cervical mucus becomes thinner and more alkaline
* Progesterone makes it more tenacious and elastic and cellular
* At the time of ovulation, mucus is thinnest and very elastic— spinnbarkeit and fern patterns when spread on a slide .

**CYCLIC CHANGES IN THE CERVIX ;**

|  |  |
| --- | --- |
| **1st half of the cycle (estrogen effect)**  | **2nd half of the cycle (progesterone effect)** |
| Mucus is profuse and watery  | Mucus is scanty and viscid  |
| Contains Na, Cl and K | Doesn’t contain Na, Cl or K |
| Acellular  | Cellular (contains leukocytes)  |
| Parallel arrangement of strands  | Cross linking of strands  |
| Positive thread and fern test  | Negative thread and fern test |

1.c) Cyclic changes in the breasts:

* Hormones are responsible for the cyclical changes that many women feel in their breasts just before menstruation.
* These include swelling, pain, and soreness.
* During menstruation, many women also have changes in breast texture. Their breasts may feel very lumpy.

**CYCLIC CHANGES IN THE BREAST;**

|  |  |
| --- | --- |
| **Under the influence on estrogen**  | **Under the influence of progesterone**  |
| Promotes growth and proliferation of mammary ducts.  | Increase growth of breast lobules and alveoli. |
| Enlarged breast  | Induceddifferentiationofdictaphonetissues. |
|  | Breast swelling, tenderness and pain 10 days proceeding mensuration caused by hyperemia and edema of interstitial tissue of the breast.  |

2.a) **MENSURAL CYCLE:** This refers to the monthly cycle of changes in the ovaries and the lining of the uterus (endometrium), starting with the preparation of an egg for fertilization. When the follicle of the prepared egg in the ovary breaks, it is released for fertilization and then ovulation occurs. Unless pregnancy occurs, the cycle ends with the shedding of part of the endometrium, which is menstruation.

Premenstrual Syndrome (PMS): A week or two before your period starts, you may notice bloating, headaches, mood swings, or other physical and emotional changes. These monthly symptoms are known as premenstrual syndrome, or PMS. About 85% of women experience some degree of PMS. A few have more severe symptoms that disrupt work or personal relationships, known as premenstrual dysphoric disorder (PMDD).

Symptoms of PMS:

* Cravings: Many women get specific cravings when PMS strikes, often for sweet or salty foods like chocolate cake. The reasons for this aren't really clear. Other women may lose their appetite or get an upset stomach. Bloating and constipation are also common.
* Acne: Acne is one of the most common signs of PMS, and it doesn't just affect teenagers. Hormonal changes can cause glands in the skin to produce more sebum. This oily substance may clog the pores, triggering a breakout -- a visible reminder that your period is on its way.
* Pain: PMS can trigger a wide range of aches and pains, including; Back pain, Headaches, Tender breasts and Joint pain.
* Mood Swings: For many women, the worst part of PMS is its unpredictable impact on mood. Irritability, anger, crying, depression, and anxiety may come and go in the days leading up to your period. Some women even have trouble with memory and concentration during this time.

**A woman’s menstrual cycle is divided into four phases:**

* **menstrual phase:** This phase starts when an egg from the previous cycle isn’t fertilized. Because pregnancy hasn’t taken place, levels of the hormones estrogen and progesterone drop. The thickened lining of your uterus, which would support a pregnancy, is no longer needed, so it sheds through your vagina. During your period, you release a combination of blood, mucus, and tissue from your uterus.
* **follicular phase:** It starts when the hypothalamus sends a signal to your pituitary gland to release follicle-stimulating hormone (FSH). This hormone stimulates your ovaries to produce around 5 to 20 small sacs called follicles. Each follicle contains an immature egg. Only the healthiest egg will eventually mature. (On rare occasions, a woman may have two eggs mature.) The rest of the follicles will be reabsorbed into your body. The maturing follicle sets off a surge in estrogen that thickens the lining of your uterus. This creates a nutrient-rich environment for an embryo to grow.
* **ovulation phase:** Ovulation is when your ovary releases a mature egg. The egg travels down the fallopian tube toward the uterus to be fertilized by sperm. The ovulation phase is the only time during your menstrual cycle when you can get pregnant. Ovulation happens at around day 14 if you have a 28-day cycle — right in the middle of your menstrual cycle. It lasts about 24 hours. After a day, the egg will die or dissolve if it isn’t fertilized.
* **luteal phase:** After the follicle releases its egg, it changes into the corpus luteum. This structure releases hormones, mainly progesterone and some estrogen. The rise in hormones keeps your uterine lining thick and ready for a fertilized egg to implant. If you do get pregnant, your body will produce human chorionic gonadotropin (hCG). This is the hormone pregnancy tests detect. It helps maintain the corpus luteum and keeps the uterine lining thick.