

Name: **Anyasi Patrick Temilolaoluwa**

Matric no: **18/mhs02/044**

Department: **Nursing**

Level: **200lvl**

Course code: **PHS 212**

Cervix

The mucous membrane of the cervix shows cyclic change during different phases of menstrual cycle. These includes;

- a) **Proliferative phase:** during this phase, the mucus membrane of the cervix becomes thinner and more alkaline due to the influence of estrogen. It helps in the survival and motility of spermatozoa.
- b) **Secretory phase:** during this phase, the mucous membrane of cervix becomes more thick and adhesive because of action of progesterone.

Vagina

Vagina is a short tubular organ. It is lined by mucus membrane, which is formed by stratified epithelial cells.

- a) **Proliferative phase:** epithelial cell of vagina are confined, changes from cuboidal to stratified type. The stratified is more resistant to trauma and infection. Estrogen is responsible for that.
- b) **Secretory phase:** vaginal epithelium proliferates due to actions of progesterone. It is also infiltrated with leukocyte. These two changes increases the resistance of vagina for infection.

MENSTRUAL CYCLE

Menstrual cycle is defined as cyclic events that take place in a rhythmic fashion during the reproductive period of a woman's life. Menstrual cycle starts at the age of 12 to 15 years, which marks the onset of puberty. The commencement of menstrual cycle is called menarche. Menstrual cycle ceases at the age of 45 to 50 years. Permanent cessation of menstrual cycle in old age is called menopause.

Duration of menstrual cycle

Duration of menstrual cycle is usually 28 days. But, under physiological conditions, it may vary between 20 and 40 days.

During each menstrual cycle, series of changes occur in ovary and accessory sex organs. These changes are divided into 4 groups:

- 1. Ovarian changes**
- 2. Uterine changes**
- 3. Vaginal changes**
- 4. Cervix changes**

Note: All these changes take place simultaneously

Ovarian changes during menstrual cycle

Changes in the ovary during each menstrual cycle occur in two phases:

A. Follicular phase

B. Luteal phase.

Ovulation occurs in between these two phases.

- 1) **Follicular phase:** Follicular phase extends from the 5th day of the cycle until the time of ovulation, which takes place on 14th day. Maturation of ovum with development of ovarian follicles takes place during this phase.

Ovarian follicles

Ovarian follicles are glandular structures present in the cortex of ovary. Each follicle consists of the ovum surrounded by epithelial cells, namely granulosa cells. The follicles gradually grow into a matured follicle through various stages. Different follicles:

A) **Primordial follicle**: At the time of puberty, both the ovaries contain about 400,000 primordial follicles. Diameter of the primordial follicle is about 15 to 20 μ and that of ovum is about 10 μ .

B. **Primary follicle**: becomes the primary follicle, when ovum is completely surrounded by the granulosa cells. Changes taking place during development of primary follicle

- i. Proliferation of granulosa cells and increase in size of the follicle
- ii. Increase in size of the ovum
- iii. Onset of formation of connective tissue capsule around the follicle. Primary follicles develop into vesicular follicles. Primordial follicle becomes the primary follicle

C. **Vesicular follicle**: changes taking place during the development of vesicular follicle

- i. Changes in granulosa cells
- ii. Changes in ovum
- iii. Formation of capsule

D. **Matured follicle or graafian follicle**: Changes taking place during the development of graafian follicle

- i. Size of the follicle increases to about 10 to 12 mm. It extends through the whole thickness of ovarian cortex
- ii. At one point, the follicle encroaches upon tunica albuginea and protrudes upon surface of the ovary. This protrusion is called stigma. At the stigma, the tunica albuginea becomes thin
- iii. Follicular cavity becomes larger and distended with fluid
- iv. Ovum attains maximum size
- v. Zona pellucida becomes thick
- vi. Corona radiata becomes prominent

Ovulation is the process by which the graafian follicle ruptures with consequent discharge of ovum into the abdominal cavity. It is influenced by LH. Ovulation occurs on 14th day of menstrual cycle in a normal cycle of 28 days. The ovum enters the fallopian tube

2) **Luteal phase**: extends between 15th and 28th day of menstrual cycle. During this phase, corpus luteum is developed and hence this phase is called luteal phase.

Corpus Luteum: Corpus luteum is a glandular yellow body, developed from the ruptured graafian follicle after the release of ovum. It is also called yellow body.

Development of Corpus Luteum:

Soon after the rupture of graafian follicle and release of ovum, the follicle is filled with blood. Now the follicle is called corpus hemorrhagicum. The blood clots slowly. Corpus hemorrhagicum does not degenerate immediately. It is transformed into corpus luteum. Follicular cavity closes gradually by the healing of the wound. Blood clot is gradually replaced by a serous fluid containing fibrin.

Uterine changes in menstrual cycle

1. **Menstrual phase:** After ovulation, if pregnancy does not occur, the thickened endometrium is shed or desquamated
2. **Proliferative phase:** Proliferative phase extends usually from 5th to 14th day of menstruation, i.e. between the day when menstruation stops and the day of ovulation. It corresponds to the follicular phase of ovarian cycle
3. **Secretory phase:** Secretory phase extends between 15th and 28th day of the menstrual cycle, i.e. between the day of ovulation and the day when menstruation of next cycle commences

Vaginal changes during menstrual cycle

Proliferative Phase: Epithelial cells of vagina are cornified. Estrogen is responsible for this.

Secretory Phase: Vaginal epithelium proliferates due to the actions of progesterone. It is also infiltrated with leukocytes. These two changes increase the resistance of vagina for infection.

Cervix changes during menstrual cycle

Proliferative Phase: During proliferative phase, the mucus membrane of cervix becomes thinner and more alkaline due to the influence of estrogen. It helps in the survival and motility of spermatozoa.

Secretory Phase: During secretory phase, the mucus membrane of cervix becomes more thick and adhesive because of actions of progesterone.

Abnormal menstruation

1. Amenorrhea: Absence of menstruation
2. Hypomenorrhea: Decreased menstrual bleeding
3. Menorrhagia: Excess menstrual bleeding
4. Oligomenorrhea: Decreased frequency of menstrual bleeding
5. Polymenorrhea: Increased frequency of menstruation

Anovulatory cycle is the menstrual cycle in which ovulation does not occur.