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NURSING

200 LEVEL

PHYSIOLOGY ASSIGNMENT

- 1 Cervix :** the mucous membrane of the cervix shows cyclic changes during different phases of menstrual cycle. These include ;
- the proliferative phase, during this phase, the mucous membrane of the cervix becomes thinner and more alkaline due to the influence of estrogen. It helps in the survival and motility of spermatozoa.
 - Secretory phase: during this phase , the mucous membrane of cervix becomes more thick and adhesive because of actions of progesterone

Vagina :

- proliferative stage: epithelial cell of vagina are cornified, changes from cuboidal to stratified type. The stratified is more resistant to trauma and infection. Estrogen is responsible for this.
- Secretory phase: vaginal epithelium proliferates due to actions of progesterone. It is also infiltrated with leukocytes. These two changes increases the resistance of vagina for infection.

2 Hormonal regulation of menstrual cycle

Hormones involved in the regulation of menstrual cycle are: hypothalamic hormone(gonadotropin-releasing hormone (GnRH)), anterior pituitary hormone (follicle-stimulating hormone (FSH) and luteinizing hormone (LH)), ovarian hormones (estrogen and progesterone)

- **Hypothalamic hormone:** GnRH triggers the cyclic changes during menstrual cycle by stimulating the secretion of FSH and LH from anterior pituitary. Gonadotropin-releasing hormone secretion depends on two factors:
 - i) External factors like psychosocial events which act on hypothalamus via cortex and many other brain centers
 - ii) Feedback effects of ovarian changes via ovarian hormones
- **Anterior pituitary hormones – FSH and LH:** follicle stimulating hormone and luteinizing hormone modulate the ovarian and uterine changes by acting directly and/or indirectly via ovarian follicles. FSH stimulates the recruitment and growth of immature ovarian follicles, LH triggers ovulation and sustain corpus luteum. Secretion of FSH and LH is under the influence of GnRH.

- Ovarian hormones- Estrogen and progesterone:** estrogen and progesterone secreted by follicle and corpus luteum, show many activities during menstrual cycle. Ovarian follicles secrete large amount of estrogen and corpus luteum secretes large quantity of progesterone. Estrogen reaches its peak twice in each cycle; once during follicular phase just before ovulation and another during luteal phase. On the other hand, progesterone is virtually absent during follicular phase till prior to ovulation. But it plays a critical role during luteal phase

Estrogen is responsible for the growth of follicles. Both the steroids act together to produce the changes in uterus, cervix and vagina.

Both the ovarian hormones are under the influence of GnRH, which acts via FSH and LH. In addition, the secretion of GnRH, FSH and LH is regulated by ovarian hormones.

