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BS MLT 4TH SEM

COURSE CHEMICAL PATHOLOGY

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QUESTION 1:

Write down a detail note on thyroid harmone ?

ANSWER : **THROID HARMONE :**

Thyroid harmone are produced by thyroid gland .

1. Thyroid gland is the largest ,butterfly, shaped
2. Is located at the base of neck below the larynx, each side of and anterior to the trachea
3. Thyroid gland are normally bi lobe structures .

Thyroid gland consist of 2 types cells .

FOLLICULAR CELL : these are the most , and the major secretory cell .they secrete thyroid harmone.

C CELL : these are fewer in number and interspersed . they secrete calcatonin .

THYROID HARMONE :

The thyroid harmone secretes three harmones .

Thyroxine or T 4 : having 4 atoms of iodine.(secretes in large amount)

Thriodothyronine or T 3:

having 3 atoms of iodine(secrete in less amount)

CALCITONIN :

Which is an important harmone of calcium metabolism.

ROLE OF thyroid harmone :

BRAIN : Growth and development of nervous system.

BONE AND TISSUE : growth_ linear growth and maturation of bone.

MUSCULE : increase protein catabolism in skeletal muscle .

KIDNEY : increased erythrpoietin synthesis.

QUESTION 2 : Explain and classify adrenocorticotropic harmone ?

ANSWER :

ADRENOCORTICOTROPIC HARMONE:

1. Also called ACTH (short form)
2. Adreno : adrenal harmone
3. Cortical : acts on adernal cortex
4. Tropic : regulating fiction
5. The harmone itself is made in the pituitary gland , namely the anterior portion of it

- **Adernal gland**
- Tissue adhering to the top of the kidney
- Adernal gland consist of an outer cortex and inner medulla
- The cortex itself is divided into three zones .
- The zone glomerlosa , the fasiculta and the zone reticularis .
- Each region secretes it's own harmonies.

GLOMERULOSA : the outer most layer of adernal gland , the glomerulosa is the main site for the production of mineralcorticoids mainly aldosterone .mineralcorticoids harmone help to control the water and irons homeostasis, particularly the concentration of NA + and k+ ins.

Aldosterone is largely responsible for long term regulation of blood pressure.

FASCICULTA :

- Situated between the glomerulosa and reticularis

Main harmone : cortisol / glucocorticoids

General function : including regulation of glucose and fatty acid metabolism and response to stress.

Main control :pituitary ATCH .

RETICULARIS :

- The inner most cortical layer

MAIN HARMONE : Androgens

Function : similar to zone fasciculta

Control : pituitary ATCH.

QUESTION 3 : Define and explain hyperthyroidism and hypothyroidism ?

Answer :

Hyperthyroidism :

Too much secretion > hypothyroidism

- Hyperthyroidism is a condition in which the thyroid gland fails to produce to enough thyroid harmone is called hyperthyroidism. Complications untreated hyperthyroidism can lead to a number of health problems.

Complications :

- Heart problems
- mental health issues
- birth detect
- myxedema.

Sign and symptoms :

- Toxic goiter
- Polycythemia
- Tachycardia
- Decrease body weight

- Diarrhea
- Muscular weakness.

Hypothyroidism :

Too little secretion > hypothyroidism

- Hypothyroidism is a condition caused by overactive thyroid gland is called hypothyroidism.
- The gland makes too much T3 and T 4 harmones .

Complications :

- Hypothyroidism can lead to a number of complications.
- Heart problems
- Brittle bones
- Eye problems
- Thyrotoxic crisis .

Signs symptoms :

- Anemia
- Fatigue
- Sleeping distrubance
- Decreased CVS problems.

QUESTION 4 : How calcium is regulate ostemalaica ?

Answer : calcium is regulated :

. Blood calcium levels are regulated by parathyroid harmone which is produced by the parathyroid gland.

Parathyroid harmone is released in response to low blood calcium levels. It increase calcium levels by targeting the skeleton, the kidney and the intestines.

Osteomalacia :

Osteomalacia is a disease characterized by the softening of the bones caused by the impairment bone metabolism.

Primarily due to inadequate levels of available, phosphate, calcium , and vitamin D or because of resorption of calcium.

- Symptoms of osteomalacia : pain in the bones

- Muscle spasms or cramps
- Muscle weakness
- Waddling gait
- Feeling of pain and needle.

Causes of osteomalacia :

Vitamin D deficiency

QUESTION 5 : write a short note on sex harmone ?

Answer : sex harmone :

Sex hormone, a chemical substance produced by a sex gland or other organ that has an effect on the sexual features of an organism. Like many other kinds of hormones, sex hormones may also be artificially synthesized. *See* androgen; estrogen.

Follicle stimulating harmone :

Is a glycoprotein gonadotropin secreted by the anterior pituitary in response to gonadotropin by hypothalamus.

- FSH and LH work together in the reproductive system.
- In women, FSH stimulate the ovarian follicle causing an egg to grow
- It also trigger the production of estrogen in the follicle.
- The rise of estrogen tells your pituitary gland to stop producing FSH and to start more LH

LH ;

Luteinizing harmone :

The pituitary gland also secrete LH another gonadotropin harmone

- It involves in reproductive system
- In men ,LH stimulates testosterone production from the interstitial cell of the tissues
- In ,men FSH acts on the cells of the testes to stimulate sperm production and maturation.

Estrogen : Estrogen is one of two main sex hormones that women have. The other one is progesterone. Estrogen is responsible for female physical features and reproduction. Men have estrogen, too, but in smaller amounts.

Why is estrogen important?

Estrogen helps bring about the physical changes that turn a girl into a woman. This time of life is called ***puberty***. These changes include:

4. Growth of the breasts
5. Growth of pubic and underarm hair
6. Start of menstrual cycles

Estrogen helps control the menstrual cycle and is important for childbearing.

Estrogen also has other functions:

6. Keeps cholesterol in control
7. Protects bone health for both women and men
8. Affects your brain (including mood), bones, heart, skin, and other tissues

progesterone :

Progesterone, hormone secreted by the female reproductive system that functions mainly to regulate the condition of the inner lining (endometrium) of the uterus. **Progesterone** is produced by the ovaries, placenta, and adrenal glands.