**Name: FAYAZ ULLAH**

**I’d: 16537**

**Assignment: Anatomy**

**Class:Bs Radiology 2nd ( section-A**

**Instructor:Sir M. Jaffar khan**

**Submitted to: Sir M. Jaffar khan**

**Endocrine System**

Classification of endocrine glands:

1. Pituitary gland

**Hormones of Pituitary gland:**

* There are two lobes in Pituitary gland ;**1 Anterior Pituitary, 2 posterior Pituitary.**

**Anterior lobe:**

* Growth hormone (**GH)**
* Prolactin
* Thyroid stimulating hormone (**TSH)**
* Adrenocorticotrophic hormone (**ACT)**
* Folical stimulating hormone (**FSH)**
* Lutenizing hormone (**LH)**

**Posterior lobe:**

* Visopressin(**ADH)**
* Oxytocin

**1: Growth Hormone (GH)**

* **Action of GH;** Stimulating of growth of bones, cartilage and connective tissue : Increase calcium absorption, Decrease sodium, potassium, calcium, phosphorous.
* Excretion from kidney.
* **Diseases of GH- 1 Gigantism :** it is due to overproduction of **GH.**
* Tall stature, Large hand and feet.
* **2: Dwarfism :** Deficiency of GH secretion.
* Shortness of stature.
* Small genitalia.
* Delicate extremities.

**2: Prolactin :**

* **Action of prolactin :** Prolactin plays an important role in the development of the mammary gland and in milk synthesis.

**3: Thyroid Stimulating Hormone ( TSH)**

* It stimulates the Thyroid gland to produce : **Thyroxine (T4),** and **triiodothyronine (T3)**

**4: Adrenocorticotrophic Hormone (ACTH) :**

* It is often produced in remain biological stress.
* It’s principal effects are in the production and release of corticosteroids.

**5: Follicle Stimulating Hormone ( FSH) :**

* FSH regulates the development, growth and pubertal maturation and reproduction of the body.

**6: Lutenizing Hormone (LH) :**

* In females, an acute rise of LH triggerediziytion.
* In males, it stimulates the production of testosterone

**Hormones of Posterior Lobe**

**Visopression (ADH):**

* Anti Diuretic Hormone (ADH)/ Visopression
* To retain water

**Oxitocin:**

* **Oxytocin** is synthesized in the hypothalamus stored in the posterior lobe of pituitary gland
* **Oxytocin** stimulates contraction of mammary gland to produce milk
* Stimulates Contruction of the smooth muscles of the uterus

1. Thyroid gland

**Thyroid Gland:**

**Triiodothyronine (T3):**

* It affects almost every physiological process in the body:
* Growth and development,
* Metabolism,
* Body temperature and
* Heart rate

**Thyroxine (T4):**

* Control developments and maturation
* Excess thyroxine result rapid development
* Deficiency thyroxine result delayed development

**Calcitonin:**

* It is a hormone secreted by the C cells of the thyroid gland
* **Main Actions:** To increase bone calcium
* To decrease blood calcium levels
* Calcitonin opposes the affects of parathyroid gland which acts to increase the blood level of calcium .

**Diseases related to Thyroid Gland:**

**Goiter:**

* Any enlargement of the thyroid gland is called **goiter** caused by iodine deficiency.
* **Characteristics features;**
* Swelling in the Neck,
* Breathing difficulties,
* Cough,
* Hoarseness and
* Swallowing difficulties.

1. Adrenal gland

**Adrenal Gland:**

* There are two adrenal glands,
* About 3 cm long and 4 cm thick
* It has two parts:
* Outer parts is the **Cortex** and the inner parts is **Medulla.**

**1: Adrenal Cortex:**

* It produces three hormones:
* Glucocorticoids,
* Mineralcorticoids and
* Sex hormones ( Androgens )
* These are collectively called as adrenal corticosteroids .

**Glococorticoids:**

* **Cortisol,** is the main Glococorticoids
* They are essential for life, regulating metabolism and stress
* **Glucocorticoids Effects:-**
* Have an inti-inflammatory action.
* Supress the immune response.
* Suppress the response of tissue to injury.
* Delay wound healing.

**Mineralcorticoids:**

* **Aldosterone** is the main mineralcorticoids
* It maintains the water and electrolyte balance.

**Sex Hormones:**

* **Androgens** are the main sex hormones
* They contribute the onset of puberty

**2: Adrenal Medulla:-**

* It is surrounded by the Cortex
* It produces two hormones:
* ADRENALINE AND NORADRENALINE

**Adrenaline and noradrenaline:-**

* Adrenaline and noradrenaline are released into the blood.
* They are structurally very similar and have similar effects, Together they potentiate by:
* Increasing heart rate
* Increasing blood pressure
* Increasing metabolic rate
* Dialating the pupil .

1. Difference between the cortex and medulla

**1: CORTEX:-**

* Cortex is the outer part of the adrenal gland.
* It produces three hormones:
* Glucocorticoids
* Mineral corticosteroids
* And Sex hormones
* These are collectively called is Adrenocorticoids.

**Glucocorticoids:-**

* Cortisol, is the main glococorticoids
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**Mineralcorticosteroids:-**

* Aldosterone is the main mineralcorticoids
* It maintains water and electrolyte balance.

**Sex Hormones:-**

* Androgens are the main sex hormones
* They contribute the onset of puberty.

**2: Medulla:-**

* It surrounded by the Cortex
* It produces two hormones
* Adrenaline and noradrenaline

**Adrenaline and noradrenaline:-**

* Adrenaline and noradrenaline are released into the blood
* They are structurally very similar and have similar effects
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* Increasing heart rate
* Increasing blood pressure
* Increasing metabolic rate
* Dilating the pupil

**The End**