Medulla of adrenal gland and adrenal gland insufficiency

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Hyperaldosteronism

- Primary: Conn's syndrome,

adenoma, carcinoma , bilateral hyperplasia familial hyperaldosteronism.

Low renin high aldosterone

- Secondary: chronic low of blood pressure(renal artery stenosis, obstruction, heart failure

High aldosterone and Renin

Primary Insufficiency of adrenal gland

- Addison’s disease low cortisol

Autoimmune , carcinoma , TB

Hyperkalemia

Dark pigmentation alpha melanocyte pro-opiomelanocortin

Secondary insufficiency low ACTH one step back from adrenal galand

Tertiary adrenal gland low CRH

Mechanism of secretion Adrenal Medulla

- Chromaffin cells

  cell bodies of postganglionic motor neurons of sympathetic nervous system

  Thoracolumbar output(T1-L2) (intramural ganglion)

  short term stress (acute stress)

  Fight or flight

  Hypothalamus (hypothalamic spinal tract)

- Posterior hypothalamic nucleus to Preganglionic of sympathetic neurons (cell bodies in the lateral gray horn of spinal cord)

Preganglionic long and Moving through chain ganglion (Exception for adrenal)

Ach, nicotinic receptors

tyrosine,

L- DOPA,

DOPAMINE,

20% Norepinephrine, 80% Epinephrine

epinephrine

Liver

EPI to G protein , ……P.K.A increasing the sensitivity

Glycogenolysis

Gluconeogenesis (hyperglycemia) odd chain F.A, glycerol, A.A, Lactic Acid

Adipocyte

Lipolysis G protein, hormone sensitive lipase,

glycerol (Liver) , fatty acids (beta oxidation in muscle a lot of ATP)

HEART

Increase blood pressure

Beta adrenergic receptors on SA node

- Increase heart rate
- Increase contractility

Alpha adrenergic receptors

- Vasoconstriction

Lung

Resp rate

dilate bronchioles Beta 2 adrenergic receptors

Constrict blood vessels of GIT ,kidneys, skin

Pheochromocytoma

- Cancer of adrenal medulla
- Excessive amount of epinephrine and nore epinephrine