

Adrenal gland medullary and Zona reticularis

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- 2.5-7.5mg daily cortisol
- Decrease Androgens and estrogens
- Apoptosis of osteocytes

Receptors of the bone cells

Decrease Osteoprogenitor

Increase rank denosumab

Hypocalcemia

Decrease PTH analogue

Vertebral fracture (asymptomatic) sudden
backbone bisphosphonates

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 norepinephrine

- Selective Beta blockers o lol esmolol A N
- Non selective o lol timolol O Z
- Alpha iolol, alol carvediolol

Gonadocorticoids

- Paraventricular nucleus CRH, ACTH, G – coupled receptors, G stimulatory protein, GDP OFF, GTP On , ADENYLATE CYCLASE ACTIVATES ATP → cAMP ACTIVATES PROTEIN KINASE A (P.K.A)
- P.K.A phosphorylate different enzymes

- Steroid hormones

Cholesterol

Pregnenolone

Progesterone and 17-OH pregnenolone

17_OH PREG,

DHEA(dehydroxyepiandrosterone)

and 17 –OH progesterone

Progesterone , 17 –OH

progesterone , Androstenedione

DHEA to Androstenedione (Gonad corticoids)

Very weak sex hormones

DHEA and Androstenedione

Male (testes) converted into testosterone (minimum)

Female estrogen (minimum)

Secondary sex characteristics

Hair growth

Facial (male)

Axillary

Pubic

Sebaceous secretion

Libido (sex drive)

Mamillary gland (female)

Clitoris (female)

androgens

Adrenal genital masculinization (high level of **DHEA and Androstenedione**)

Increase libido in male and fascial hair in female

- Very weak
- Acts as precursors

Male testosterone

Female estrogen

Secondary sex characteristics

11 beta hydroxylase deficiency

Deoxycorticosterone

Increase mineralocorticoids

Low renin

21 hydroxylase

Decrease mineralocorticoids

Increase androgens

17hydroxylase

Increase mineral

Decrease androgens