

FUNCTIONS OF ADRENAL MEDULLA

The adrenal gland is pyramidal shaped paired gland situated at anterior lobe of each Kidney. It is divided into two parts.

A) Inner medulla, which secretes catecholamine by its chromaffin cells, and B) Outer cortex. The outer cortex consists of three parts –

a) Zona fasciculata which cells are also called spongioblast, b) Zona glomerulosa, c) Zona reticulata

ADRENAL MEDULLA

The Chromaffin cells of medulla synthesis the catecholamine hormones viz Dopamine, Epinephrine, Norepinephrine

Function

1. Both these hormones viz Epinephrine & Nor-epinephrine rise blood pressure, epinephrine by raising the cardiac output by increasing the force (inotropic effect) and rate (chronotropic effect) of contraction and Nor-epinephrine by increasing peripheral resistance due to vasoconstriction.
2. Epinephrine helps in raising the systolic pressure [diastolic pressure remains same] where as Norepinephrine raises both the systolic as well as diastolic pressure without changing cardiac output.

999. In adipose tissue Epinephrine increase *CAMP* which activate *Lipase* which in turn promote lipolysis and release of fatty acids into circulation (these fatty acids serve as energy source in muscles and can activate gluconeogenesis in liver)
1000. In muscles and to lesser extent in liver, Epinephrine stimulates *Glycogenolysis* [By activating a protein kinase]
1001. Epinephrine increases body temperature, metabolic rate, oxygen consumption and the respiratory quotient.
1002. Epinephrine accelerates conversion of liver glycogen into glucose with a consequent rise in the blood sugar level. Muscle glycogen is broken down to lactic acid.
1003. Epinephrine inhibit the smooth muscles of stomach, intestines, urinary bladder and uterus where as it excites the smooth muscle of ureter, pyloric sphincter of bladder and anus.
1004. It { Epinephrine } causes emotional conditions
1005. Epinephrine and Norepinephrine stimulate the central nervous system and produce a state of excitation alertness and awareness.

Disorder

Phaeochromocytoma: it occurs when medullary tumor develops which involve the chromaffin cells.

Excessive secretion of medullary hormone produces symptoms like sweating tremendous headache, weakness giddiness, diarrhea, vomiting, and abdominal colic anxiety.

These attacks are sometimes followed by emotional upsets. In some cases, glycosuria and increased thyroid activity may lead to increased basal metabolic rate. Hypertension may cause cardiac failure or cerebral hemorrhage.

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