Endocrine System Clinica Disorders

Medicine

Flashcards

 Clinical Clues to Diagnosis Pathophysiology

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- Addison's Disease
- Cushing's Syndrome
- Diabetes Insipidus
- Diabetes Mellitus Type 1
- Diabetes Mellitus Type 2
- Hyperpituitarism
- Hypopituitarism
- Hyperthyroidism
- Hypothyroidism
- Syndrome of Inappropriate Antidiuretic Hormone

1 Addison's Disease

- Tanned appearance to skin
- Low blood pressure,
- ↓ serum glucose,
- ↓ serum sodium (Na+),



- The adrenal cortex secretes hormones necessary to react to stress (physical or psychological). They include glucocorticoids, aldosterone, and sex hormones (sugar, salt, and sex).
- In primary hypofunction of the adrenal gland, the adrenal hormones are not secreted in adequate amounts; in secondary hypofunction of the adrenal glands, insufficient pituitary secretion of ACTH occurs.
- Primary Addison's disease may be autoimmune.
- Adrenalectomy may cause Addison's.

2 Cushing's Syndrome

- Moon face
- Buffalo hump
- Truncal obesity
- ↑ serum glucose
- ↓ potassium (K+)

- Hormones secreted by the adrenal cortex are the body's stress hormones (glucocorticoids and mineral corticoids).
- Cushing's disease is caused by excess cortisol secretion related to excess ACTH secretion, while Cushing's "syndrome" is related to consumption of exogenous cortisol.
- May be caused by secreting tumor of the lungs or adrenal glands.

3 Diabetes Insipidus

Low specific gravity of urine <1.005
Urinary output in excess of 5–15 liters daily

- ADH or AVP is secreted by the posterior pituitary gland and is responsible for reabsorption of water by the kidney.
- DI is caused by a deficiency of ADH and excess loss of water through urination. Urinary output can be in excess of 5–15 L daily.
- DI can be caused by drugs like lithium; surgical removal of the pituitary; and nephrogenic DI.
- Psychogenic DI (not true DI) is caused by a desire to drink large amounts of fluids (water intoxication); alcohol ingestion causes a temporary DI resulting in dehydration.

4 Diabetes Mellitus Type 1

- Polyuria
- Polydipsia
- Polyphagia

- The pancreas secretes insulin from the beta cells (islets of Langerhans) in response to elevated blood glucose levels.
- In primary diabetes mellitus type 1, the beta cells are destroyed by an autoimmune reaction.
- In secondary diabetes mellitus type 1, the beta cells are damaged by cancer of the pancreas or other diseases like pancreatitis and cystic fibrosis.

5 Diabetes Mellitus Type 2

- Sedentary lifestyle
- Polyuria
- Polyphagia
- Polydipsia
- Elevated serum glucose

- Type 2 diabetes increases in incidence with obesity, poor diet, and sedentary lifestyle as the cells of the body become resistant to insulin.
- Genetic link (10 new gene variants that affect blood glucose and insulin levels have been identified); type 2 diabetes is affecting more children related to poor diet and obesity.

6 Hyperpituitarism

- Excess growth hormone
- Abnormal lipid level
- High blood glucose levels
- Adults experience arthritis
- Visual changes
- Enlarged hands & feet

- Hyperfunction of the pituitary is almost always caused by an adenoma.
- GH, from the anterior pituitary, is secreted in large amounts, resulting in gigantism in children and acromegaly in the adult.
- Acromegaly is characterized by growth of bone, connective, and soft tissue.
- Hands and feet become enlarged; larynx enlarges; vertebral growth often results in kyphosis; teeth become displaced; enlargement and erosion of the sella turcica causes visual changes and headache.
- Metabolic alteration causes fats to become the initial energy burned, resulting in ketosis.
- GH–induced insulin resistance, along with glycogen release by the liver, causes DM.
- Other anterior pituitary hormones are inhibited.
- Fatty acid metabolism is altered causing atherosclerosis.
- Excess soft tissue of the soft palate cause sleep apnea.

7 Hypopituitarism

- Short stature in children accompanied by
 - Weakness
 - Low blood glucose
- Delayed sexuality
- Stunted growth of sexual organs.

- Growth hormone (somatropin) is deficient related to an ablative pituitary tumor or failure of the gland to develop.
- Dwarfism, in the child, and mental slowness.
- In adults, decreased GH leads to central accumulation of body fat and related problems with cardiovascular health.

8 Hyperthyroidism

- Restlessness,
- Irritability,
- Heat intolerance,
- •↓ TSH,



- The thyroid gland hormones are responsible for carbohydrate, protein, and fat metabolism required by the body cells and for calcium regulation (in tandem with the parathyroid glands).
- Primary hyperthyroidism (Graves' disease) is caused by excess thyroid hormone secretion (T3 and T4).
- Secondary hyperthyroidism is caused by hypersecretion of thyroid-stimulating hormone (TSH) by the pituitary gland.
- A thyroid tumor may also cause hypersecretion of thyroid hormones or TSH.
- Exposure to radiation is another causative factor.

9 Hypothyroidism

- Lethargy
- Mental slowness
- Menorrhagia
- ↑ TSH
- ↓ T3 and T4



- The thyroid gland is responsible for metabolism of carbohydrates, fats, and protein according to body requirements.
- Primary hypothyroidism (myxedema) occurs when the thyroid gland does not secrete adequate thyroid hormone.
- Secondary hypothyroidism is related to hyposecretion of thyroid-stimulating hormone (TSH) by the pituitary gland or overtreatment of hyperthyroidism.
- Low levels of thyroid hormone decrease metabolism in the body.
- Hashimoto's thyroiditis is an autoimmune disorder that destroys thyroid tissue.

O Syndrome of Inappropriate Antidiuretic Hormone

- High blood pressure
- Low serum osmolality
- Bounding pulse
- Seizures.

- SIADH occurs when ADH does not decrease in response to a low serum osmolality, leading to fluid overload.
- Frequently, SIADH is associated with cancers of the lung, pancreas, and Hodgkin's disease.
- ADH may hypersecrete in the presence of head trauma or tumor or as a complication of diabetes insipidus treatment.