

Adrenal Gland Disorders

Hypofunction

- **ADDISON'S DISEASE**
 - Chronic adrenal insuff that results in inadequate prod of glucocorticoids (↓ cortisol: muscle weakness, ↓ BG, slow wound healing), mineralcorticoids (↓ aldosterone), androgens (testosterone, estrogen)
 - Causes
 - Autoimmune destruction (70%)
 - Adrenalectomy
 - High dose, L/T steroid therapy
 - Adrenal tumor
 - Damage to adrenals: necrosis, sepsis, hemorrhage
 - ↓ ACTH secretion
 - S/S: fatigue, GI, personality changes, pigmentation changes (bronzed), hypotension, fluid/electrolyte imbalance (dehydration, Metabolic acidosis), ↓ BG
 - Mgmt: fluid replacement, hormone therapy
- **ADRENAL CRISIS**
 - Sudden ↓ in adrenocortical hormones causes by stress
 - S/S: N, V, severe fluid/electrolyte imbalance, tachycardia, dysrhythmias, seizures, coma, death

Physiology

- **Catecholamines**
 - Epinephrine, Norepinephrine
- **Androgens (Sex Hormones)**
- **Mineralcorticoids (Aldosterone)**
 - Promotes Na⁺ & H₂O reabsorption
 - Causes K⁺ excretion
 - Regulated by RAAS
- **Glucocorticoids (Cortisol)**
 - Maintains glucose levels by ↓ rate of glucose use & inhibits effects of insulin
 - Anti-inflammatory
 - Emotional stability
 - Production ↑ by stress, hypoglycemia, hypoxia, pain, infection, trauma, anxiety

Hyperfunction

- **CUSHING'S SYNDROME (Glucocorticoid Excess)**
 - Overactivity of adrenal glands → hypersecretion of cortisol
 - S/S
 - Central obesity
 - Buffalo hump
 - Moon face
 - Thin, fragile skin
 - Ecchymoses
 - Muscle wasting
 - Osteoporosis
 - ↑ BP
 - Hyperglycemia
 - Weight gain
 - Change in mood
 - ↑ susceptibility to infection
 - Slow healing of minor cuts
 - Diagnostics
 - CT, MRI
 - ↑ Na⁺, ↓ K⁺
 - ↑ BG
 - 24 hr urine for free cortisol
 - Dexamethasone Suppression Test
 - Plasma ACTH
 - Mgmt
 - Surgical removal of lesion
 - Radiation tx
 - Drug tx
- **CONN'S SYNDROME (Aldosterone Excess)**
 - Excessive secretion of aldosterone from one or both adrenal glands
 - Reverse dramatic HTN
 - Correct hypokalemia
 - Prevent kidney damage
 - Adrenalectomy