

Pituitary and Hypothalamic Disorders

Cushing's syndrome

Def: chronic glucocorticoid excess (Endogenous, Exogenous)

Et:

- Pituitary adenoma (ACTH dependent)
- Ectopic ACTH secreting tumor (small cell lung carcinoma, bronchial, carcinoid, pheochromocytoma, medullary thyroid tumors).
- Long-term corticosteroids use (exogenous)
- Adrenal Hyperplasia

S+S:

- Moon Face
- Buffalo hump
- Deposition of adipose tissue.
- Acanthosis nigricans
- Hypertension
- Hyperglycemia
- Muscle weakness
- Fatigue
- Osteoporosis (↑ bone catabolism)
- Cutaneous striae
- Easy Bruising
- Acne, Hirsutism, amenorrhea (↑ Androgens)
- Glucose intolerance
- Mood disorders (Depression, emotional changes)

Dx:

- 24-hour urine cortisol → Best initial test
 - Specific
 - If elevated → Hypercortisolism
- 1 mg overnight dexamethasone Suppression test
 - False positive: (Depression, Alcohol, Obesity)
- ACTH level → determine the cause
 - ↑ ACTH → pituitary or Ectopic source
 - ↓ ACTH → Adrenal tumor or Hyperplasia
- High dose dexamethasone suppression test → source of ACTH
 - Suppression → pituitary
 - No suppression → Ectopic
- Inferior petrosal sinus sample

Tx:

- Surgery:
- Pituitary source → Remove → Transsphenoidal
- Adrenal source → remove → laparoscopy

24h-urine cortisol → cushing syndrome → dexamethsone suppression test (high dose):

- Suppressed → pituitary adenoma → do MRI
- Not suppressed → not pituitary → **ACTH-level (cause):**
 - ↑ ACTH → adrenal Hyperplasia (ectopic), lung → do CT (chest)
 - ↓ ACTH → Adrenal neoplasia

	CUSHING'S DISEASE (PITUITARY HYPERSECRETION)	EXOGENOUS STERIOD USE	ECTOPIC ACTH SECRETION	ADRENAL CORTISOL HYPERSECRETION
ACTH	↑	↓	↑	↓
Urinary free cortisol	↑	↑	↑	↑

Hyperaldosteronism

Def:

- overproduction of Aldosterone despite ↑ BP and ↓ Renin
- Primary: production stimulus within adrenal gland.
- Secondary: production stimulus Extraadrenal

Et:

- Primary:
 - Unilateral adrenal adenoma (70%)
 - Bilateral Hyperplasia

S+S:

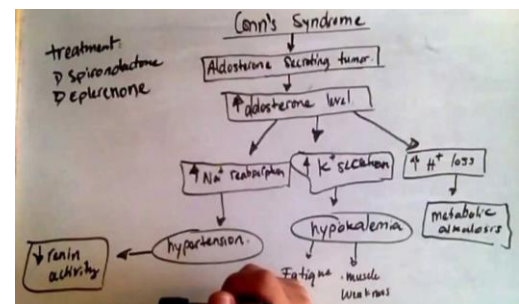
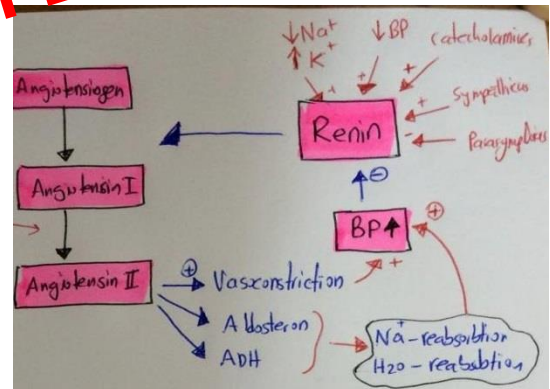
- ↑ BP (Hypertension)
- ↓ K (Hypokalemia)
- ↓ Renin activity
- Metabolic alkalosis (Aldosterone increase H⁺ Excretion)
- Fatigue
- Weakness (muscle)
- Polyuria, polydipsia
- Edema

Dx:

- Aldosterone/Renin 20:1 (best initial) → if ↑ Renin → NOT Primary Hyperaldosteronism. (X > 30 = aldosterone hypersecretion)
- CT → only after chemical testing:
 - ↓ K
 - ↓ Renin
 - ↑ Aldosterone

Tx:

- Adrenal adenoma (unilateral) → surgical resection
- Bilateral Hyperplasia → Spironolactone (block aldosterone)



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