## 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 if Primary 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 → dexamethasone 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

### 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)