Adrenal Insufficiency and Cushing: ACTH

ACTH is the key: when it is high there is hyperpigmentation; when it is low, there is not

1ºAI

Primary insufficiency (Addison)

the adrenal fails · high ACTH, hyperpigmentation · low cortisol and aldosterone (low sodium, high potassium)

2ºAI

Secondary insufficiency

the pituitary fails · low ACTH, NO hyperpigmentation · aldosterone preserved

CD

ACTH-dependent Cushing

pituitary adenoma or ectopic ACTH (small cell lung cancer) · high ACTH

CI

ACTH-independent Cushing

adrenal adenoma · low ACTH, no hyperpigmentation

Why pigment
ACTH comes from POMC, which stimulates melanocytes

Key tests
Dexamethasone suppression · ACTH stimulation

Addisonian crisis
Hydrocortisone + fluids without waiting

Ectopic Cushing syndrome: suspect small cell lung carcinoma