CLINICAL CASE REPORT

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CLINICAL PRESENTATION

- 18 year old female
- **Referral diagnoses:** Cushing’s syndrome. Bronchial asthma.
- weight gain despite a strict diet (no NaCl restrictions), BMI 28.9 kg/m$^2$;
- thirst (drinks ~5-6 L/day);
- somnolence;
- periodic intense headaches;
- acne, hirsutism (II degree),
- TA 145-150/85-90 mm Hg, no peripheral oedema;
WORKUP

- **Complete blood count:** ↑Eo;

- **Urine analysis:** specific gravity 1011-1015;

- **Blood biochemistry:**
  - $K^+$ 4.39 [3.5-5.1] mmol/L
  - $Na^+$ 142 [135-145] mmol/L
  - $Ca^{2+}$ 2.38 [2.1-2.55] mmol/L
  - glucose, hsCRP, ALAT, GGT, CK, uric acid, creatinine, bilirubin, lipase, lipid profile - within the reference range;
WORKUP

Hormone tests related to Cushing’s syndrome:

- cortisol in 24 h urine: 10.8 μg/dL [4.3-176], diuresis - ↑ 3.9 L

- dexamethasone suppression test:
  starting level of cortisol - 11.2 μg/dL, after suppression - 0.0 μg/dL;
plasma aldosterone level: ↑ 840 pg/ml [10-310]

plasma renin level: ↓ 2.2 μU/ml [4.4 - 46.1]

aldosterone/renin ratio: ↑↑ 381

NaCl loading test (2L isotonic NaCl i/v in 4h): aldosterone level 747 pg/ml

Postural stimulation test: aldosterone level after 2h - 917 pg/ml, renin level after 2h - 14.3 μU/ml
WORKUP

- **abdominal CT**: no indication of any formations in the adrenal glands or hyperplasia of adrenal glands;
- **water deprivation testing**: no increase in urine osmolality after administration of desmopresin.

[Graph showing water deprivation test - time vs. urine osmolality mosm/kg with labels for Normal, Polydipsy, Centrals, and Diabetes insipidus.]
DIAGNOSES

- Primary idiopathic hyperaldosteronism
- Secondary renal diabetes insipidus
- Bronchial asthma
TREATMENT

- Verospiron (spironolacton) - aldosterone antagonist, androgen antagonist
- Cozaar (losartan potassium) - angiotensin II antagonist
- Topamax (topiramate)
LEARNING POINTS

- Primary hyperaldosteronism is the most frequent cause of secondary arterial hypertension;

- **Classical triade**: hypokalemia + arterial hypertension + metabolic alkalosis

- Up to almost 90% of hyperaldosteronism patients have normal $K^+$ levels;

- Purposeful screening of aldosterone/renin ratio in patient groups with:
  - arterial hypertension (AH) and hypokalemia;
  - therapy resistant AH;
  - an adrenal incidentaloma.