**EP272: RAAS-inhibition and diagnostic challenges in severe primary hyperaldosteronism**

**Introduction**
- Accurate diagnosis in primary hyperaldosteronism is essential for adequate causative treatment.
- RAAS-affecting antihypertensives may interfere with diagnostic procedures, possibly leading to misclassification of disease.
- Withdrawal of RAAS-inhibition may not be possible in patients with severe hyperaldosteronism due to treatment refractory hypertension and hypokalemia.
- **AIM**: to report on the diagnostic and curative outcomes in a case of a patient with severe hyperaldosteronism where RAAS-inhibition could not be safely withdrawn.

**Case history**
- 37 year old Caucasian male
- Referred for primary hyperaldosteronism, no causative diagnosis
- Current medication: spironolactone 200mg, bimatoprost 20mg, doxazosine 12mg, metoprolol 25mg, potassium chloride 100 mmol
- Withdrawal of RAAS-interfering medication led to hypokalemic hypertensive crisis and repeated emergency unit admittance
- Symptomatology: muscle weakness, Aggressive and restless. Reduced libido
- Physical: BP 150/110 mmHg, BMI 36.3 kg/m², Adiposity and gynaecomastia
- Lab: Sodium 144 mmol/L, potassium 3.9 mmol/L.
  (No medication) Renin 3.8 mU/L (ref 5.3 - 99)
  Aldo 3620 pmol/L (ref 100 - 1200) (ARR 952 pmol/mL)

**Clinical course**
- Indication for selective Adrenal Vein Sampling (AVS)
- Medication adjusted to:
  - Spironolactone tapered, potassium chloride titrated
  - Hydralazine, verapamil and doxazosine for hypertension
- Two weeks after discontinuing spironolactone >> emergency room:
  - Complain: dizziness, blurry vision, headache
  - Hypertensive: 185/110 mmHg
  - Medication: hydralazine 80mg, doxazosine 16mg, verapamil 240mg, potassium 250 mmol
  - Retinal examination: grade II hypertensive retinopathy
  - Enalapril added while monitoring renin concentration (Panel)
- AVS successfully performed while taking enalapril 40mg daily
  - Evident right sided origin of aldosterone hypersecretion
  - Spironolactone reinitiated while waiting for surgery (400mg/day)
  - Successful right side adrenalectomy
  - Currently normotensive with lisinopril monotherapy
  - Aldo <100 pmol/L

**Conclusions**
- Even in very severe primary hyperaldosteronism, RAAS-interfering medication should be withdrawn to allow for accurate diagnostic testing and possible curative treatment.
- Very high doses of potassium replacement and mineralocorticoid antagonists may be required to treat the severe phenotype
- If RAAS-interfering medication cannot be withdrawn, then renin (activity) should be measured; diagnostic procedures can be interpreted reliably in case of persistently suppressed renin concentrations/activity.

**Imaging**
- Adrenal CT showing a 14mm adenoma in the left adrenal gland and a 20mm adenoma in the right adrenal gland.

**References**
1. Rossi et al., Hypertension 2014

**Acknowledgments**
We would like to thank the patient for his kind permission to present his case history.

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