

# Acute renal failure in a patient with hypopituitarism and rhabdomyolysis



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## Introduction

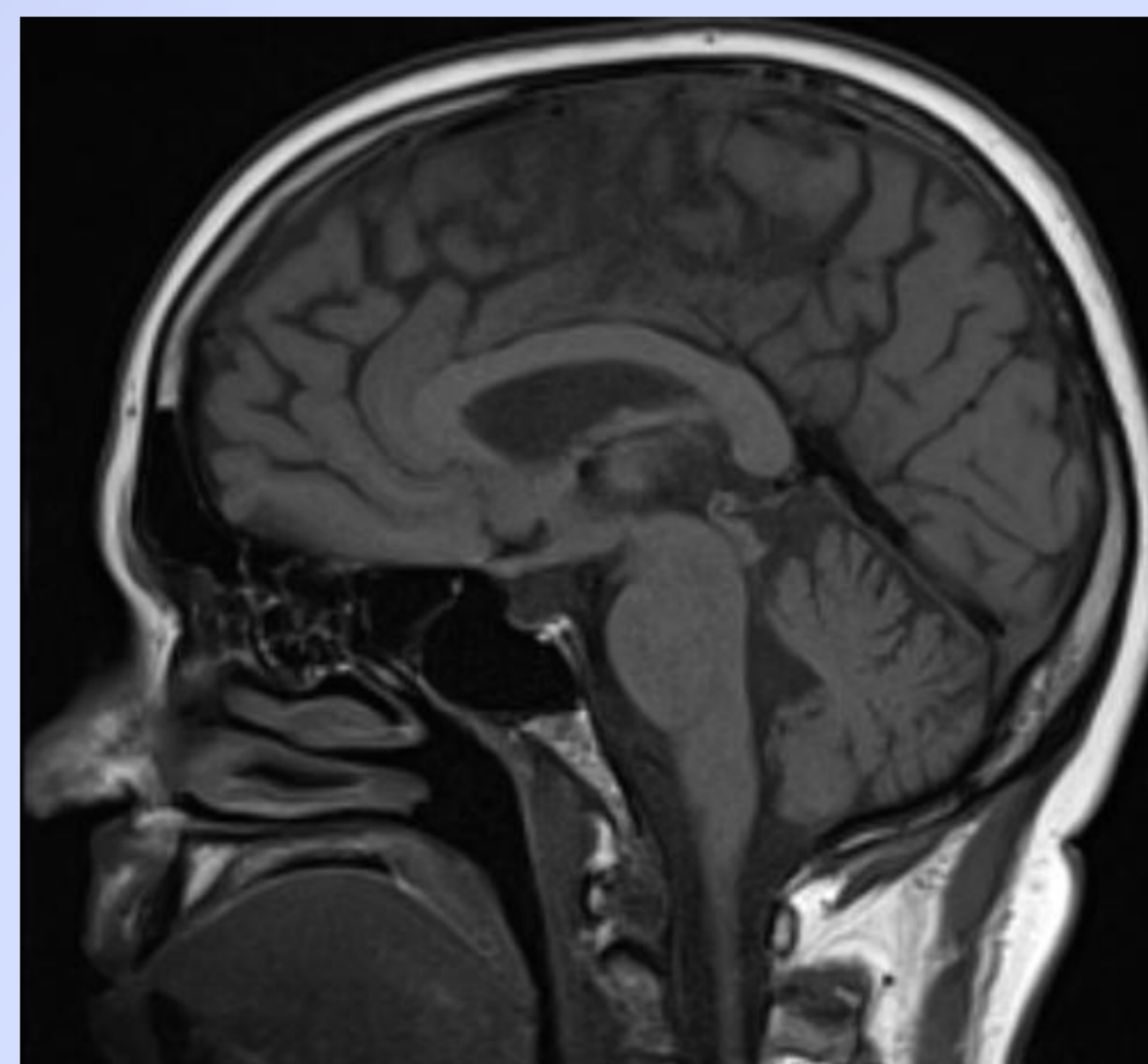
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**Hyponatremia** can be a life-threatening emergency. Severe hyponatremia may occur in patients with **hypopituitarism and secondary adrenal insufficiency and hypothyroidism**. Acute decompensation of pituitary insufficiency can lead also to accompanying **rhabdomyolysis and acute renal failure (ARF)**.

## Case report

A 67-year-old woman complaining of **general fatigue, dizziness, nausea, feeling cold and numbness of limbs and tongue** was admitted to the emergency room. Neurological consultation was made and computer tomography (CT) showed probably old, single, hypodense ischemic lesion of 6 mm diameter localized subcortically in the left frontal lobe. **Pale skin, loss of axillary hair and scarce pubic hair** were found on inspection. Patient's past medical history was unremarkable and she had not taken drugs permanently. Patient gave birth to three, menopause occurred at the age of 52.

Initial laboratory studies have shown **severe hyponatremia (Na 116 mmol/l), resistant to the symptomatic treatment**. Rhabdomyolysis and acute renal failure developed in patient. **Rhabdomyolysis** was diagnosed on the base of **elevated liver enzymes, CK-MB, CPK, and creatinine**. Patient was admitted to the Department of Endocrinology. Diagnosis of complete pituitary insufficiency was made on the basis of hormonal profiles. **Magnetic resonance imaging (MRI) of pituitary** has shown **very small pituitary gland**. Patient recovered after **hydrocortisone and levothyroxine substitution** and nephrology treatment. Due to the rhabdomyolysis and ARF patient required an appropriate **hydration and single hemodialysis treatment**.



**Pic.1. Pituitary MRI** – very small pituitary gland of maximum 1-1,5 mm height

## Conclusions

**The diagnosis of hypopituitarism in hyponatremic patients can be overlooked and have severe consequences.** Severe hyponatremia and acute renal failure may be the leading symptoms of **acute decompensation of pituitary insufficiency**. **Appropriate hormonal substitution with alert nephrological monitoring and management** (including renal replacement therapy if necessary) are crucial in case of acute pituitary decompensation and accompanying complications treatment.

## Laboratory results

### ON ADMISSION:

Na: **116 mmol/l** [N:136 – 145]; K: **3,69 mmol/l** [N: 3,50 – 5,10]  
Urea: **20 mg/dl** [N:17 – 71]; creatinine: **0,97 mg/dl** [N:0,50 – 0,90]; eGFR (MDRD): **57 ml/min/1,73m2** [N:> 60]  
ALT: **23 U/l** [N:10 – 31]; AST: **52 U/l** [N:10 – 31]; CPK: **2135 U/l** [N:26 – 140]; CK-MB mass: **22,50 ng/ml** [N:0,00 – 3,77]

### HORMONAL TESTS:

TSH: **2,82 µU/ml** [N:0,27 – 4,20]; FT3: **1,39 pmol/l** [N:3,90 – 6,70]; FT4: **2,45 pmol/l** [N:11,5 – 21,0]  
ACTH: **29,53 pg/ml** [N:7,20 – 63,30]; DHEA-S: **0 µg/dl** [N:9 – 246]  
Cortisol profile: 8.00: **151 nmol/l**; 18.00: **143 nmol/l**; 23.00: **134 nmol/l** [N: 7-10 a.m.: 171-536; 4-8 p.m.: 64-327]  
FSH: **6,5 mIU/ml**; LH: **1,0 mIU/ml**; prolactin: **49 µIU/ml** [N:70 – 510]; estradiol (E2): **6,71 pg/ml** [N: postmenopausal: < 54,7]  
GH: **< 0,03 ng/ml** [N:0,13 – 9,88]; IGF-1: **24 ng/ml** [N:70-434]

**MAXIMUM CPK: 7497 U/l; MAXIMUM creatinine: 1,54 mg/dl; MINIMUM eGFR (MDRD): 34 ml/min/1,73m2**

### AT HOSPITAL DISCHARGE:

Na: **141 mmol/l**; K:**3,96 mmol/l**; urea: **46 mg/dl**; creatinine: **1,50 mg/dl**; eGFR: **35 ml/min/1,73m2**; CPK **221 U/l**

