

# ETIOLOGY AND OUTCOME OF HYPONATREMIA DUE TO PITUITARY INSUFFICIENCY IN A TERTIARY ENDOCRINE CENTER

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**BACKGROUND:** Hyponatremia is a common electrolyte abnormality, especially in elderly, hospitalized patients, with a prevalence of severe hyponatremia (<125 mmol/l) up to 6-8%. Pituitary insufficiency (TSH + ACTH) may be difficult to diagnose, but important to differentiate from SIADH and cerebral salt wasting syndrome.

**AIM:** to describe the etiology and outcome of patients with hyponatremia due to pituitary insufficiency in a tertiary endocrine center.

**PATIENTS and METHODS:**

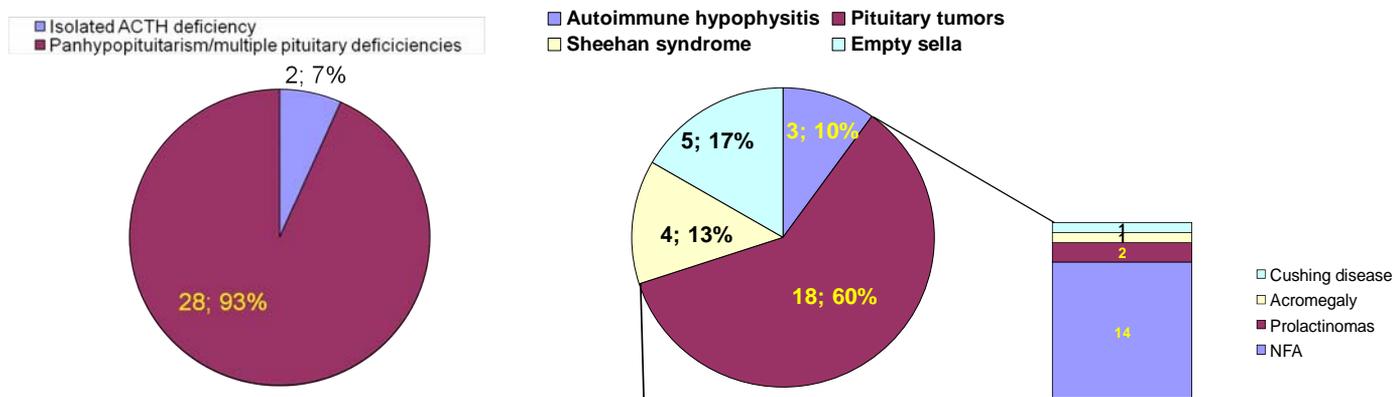
Records of **40 patients** presented with/referred for **hyponatremia (<130 mmol/l)** in the Department of Pituitary Pathology between 2005-2012 were retrospectively reviewed.

- **30 patients** (16M/14F, aged 61.9 ± 14.3 years) with hyponatremia due to **pituitary insufficiency**
- **3 patients** with **severe primary hypothyroidism**
- **7 patients** with **primary adrenal failure**.

**RESULTS:**

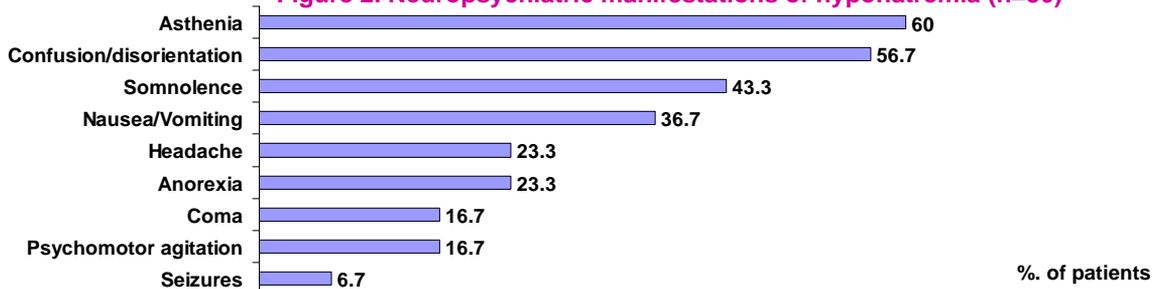
- in **13 patients**, hyponatremia was the **event revealing pituitary insufficiency**
- **mean serum sodium at diagnosis= 113.7 ± 8.6 mmol/L (range: 97-128)**
- **severe hyponatremia (<125 mmol/L): 26/30 patients (86.7%).**

**Figure 1. Hyponatremia's etiology in studied patients (n=30)**



Precipitating factors: infections (n=6), drugs (n=1), unknown (n=23).

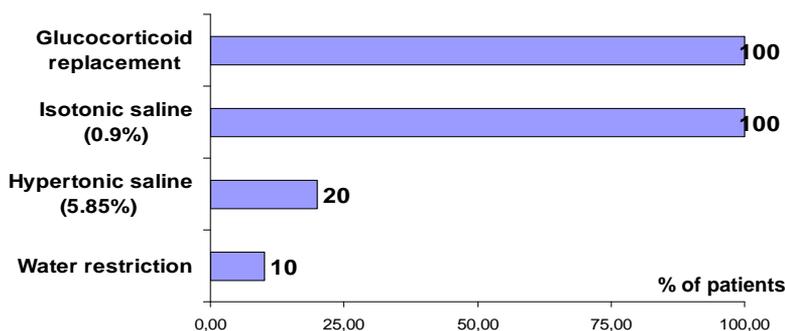
**Figure 2. Neuropsychiatric manifestations of hyponatremia (n=30)**



**Table 1. Biochemical and hormonal data**

Parameter	Biochemical & hormonal data	
	Median	Range
Na <sup>+</sup> (mmol/L)	115	97 – 128
K <sup>+</sup> (mmol/L)	4.1	4 - 4.6
Glycemia (mg/dL)	76.5	42 – 137
Uric acid (mg/dL)	3.5	2.2 – 8.2
Plasma osmolality (mosm/kg)	251	231 – 269
Urinary osmolality (mosm/kg)	354.5	329 - 556
Serum 8 a.m. cortisol (µg/dL)	2.3	Nd-12.3
Stimulated cortisol (µg/dL)	14	0.4-33.5
ACTH (pg/mL)	28.6	1-108.8
TSH (mIU/L)	1.6	0.01-15
FT4 (pmol/L)	7.9	0.7-11.8

**Figure 3. Treatment of hyponatremia (n=30)**



There were no fatalities or osmotic demyelization syndrome.

**CONCLUSION:** Hypopituitarism with TSH and ACTH insufficiency seems to be a frequent endocrine cause of severe hyponatremia. Correct diagnosis is important, as glucocorticoids are very effective.