Insipid Diabetes and Acute Myeloid Leukemia: Genotypic/Phenotypic Correlation?

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INTRODUCTION

- Central diabetes insipidus (CDI) is a rare complication of Acute Myeloid Leukemia (AML) occurring in less than 0.6% of patients.
- CDI may precede, occur simultaneously or after the diagnosis of AML.
- It is associated with genetic changes in chromosomes 3 and 7 and these alterations are predictors of a poor prognosis.

CASE REPORT

72 anos year-old man → **Past Medical History:** Thyroid nodule; Inguinal hernia → No therapy

April 2015	May 2015	June 2015
The patient began to complain of polyuria, polydipsia, weakness and weight loss	He was evaluated in the emergency department and was discharged with the diagnosis of urinary infection	As the complaints persisted, he was again evaluated; He was dehydrated and with easy bruising

Study findings suggested AML:
Analytical Study: Hb 8.8g/dL, leukocytes 13,03x10^9/L, neutrophils 0.87, blasts 46%
Karyotype 45,XY,inv (3) (q21q26), - 7 (20)

Abdominal ultrasound: hepatomegaly (21.2 cm) and mild splenomegaly (13.5 cm). Hepatic parenchyma with diffuse increase in echogenicity related to abnormal cell infiltration.

Immunophenotyping: 53% of myeloid blasts , CD34+

He was admitted to the Hematology Department and began chemotherapy

→ Endocrinology evaluation was requested due to analytical alterations and patient clinic:

- Hypernatremia: **159 mEq/L** (135-145)
- Serum osmolality: **332 mOsm/Kg** (282-300)
- Urine osmolality in the lower limit of normal**: 187 mOsm/kg** (50-1200)
- **Negative water balance with weight loss and dehydration**

- **Pituitary CT**: Pituitary with normal morphology and dimensions, although a low uptake area in the median/ right paramedian region was assumed

CDI was suspected and the patient started nasal desmopressin 5µg twice a day on august 4th

Table 1. Evolution of the patient

	3.08.2015	5.08.2015	6.08.2015	7.08.2015
Na (135-145mEq/L)	159	149	147	142
Serum Osm (50-1200 mOsm/kg)			288	
Water Balance	Negative	Negative	Positive	Positive
Resolution of hyponatremia, polydipsia and polyuria				

He was discharged with oral desmopressin 0.06 mg twice a day

As the patient did not show response to induction chemotherapy, he started salvage chemotherapy.

Given the patient's clinical context, we decided not to conduct water restriction test and pituitary MRI was also delayed.

CONCLUSIONS

- In this case the symptoms of diabetes insipidus led to the diagnosis of AML.
- There are descriptions in the literature that these cytogenetic changes are associated with the development of DCI in AML, although the causes of this association are not fully understood.

References:

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