

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

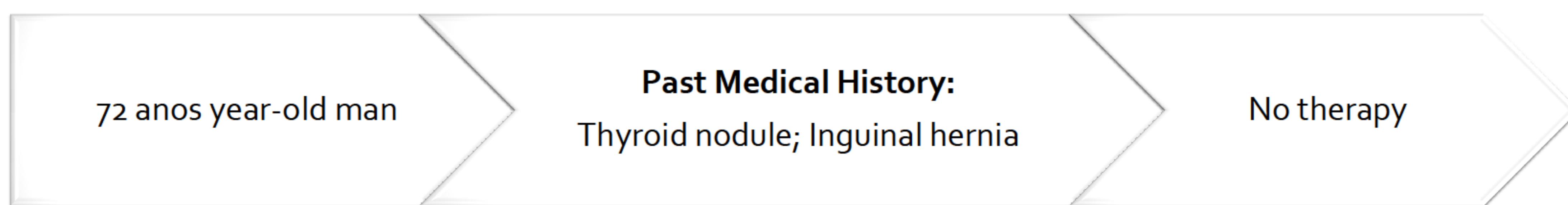
Maria Manuel Costa<sup>1,2,3</sup>, Sandra Belo<sup>1,2,3</sup>, Pedro Souteiro<sup>1</sup>, Davide Carvalho<sup>1,2,3</sup>

<sup>1</sup>Department of Endocrinology, Diabetes and Metabolism, Centro Hospitalar São João, Porto, Portugal; <sup>2</sup>Faculty of Medicine, University of Porto, Porto, Portugal  
<sup>3</sup>Instituto de Investigação e Inovação da Saúde da Universidade do Porto

## 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



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  $13,03 \times 10^9/L$ , 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
<b>Na</b> (135-145mEq/L)	159	149	147	142
<b>Serum Osm</b> (50-1200 mOsm/kg)			288	
<b>Water Balance</b>	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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Harb A, Tan W, Wilding GE, Battiwalla M, Sait SN, Wang ES, Wetzler M. Acute myeloid leukemia and diabetes insipidus with monosomy 7. Cancer Genet Cytogenet. 2009 Apr 15;190(2):97-100