Benign Transient Hyperphosphatasemia of Infancy: A Case Report

Hiperfosfatasemia Transitória Benigna da Infância: Um Caso Clínico

Keywords: Alkaline Phosphatase; Infant
Palavras-chave: Fosfatase Alcalina; Lactente

Dear Editor,

Benign transient hyperphosphatasemia of infancy (BTH) is a benign condition characterized by a marked elevation of alkaline phosphatase (ALP) levels.[1-4] It is often found in children under five years old[1,4] with no evidence of liver or bone disease. It is usually detected incidentally in laboratory tests and usually normalizes spontaneously, being considered more of a laboratory than clinical disorder.[2]

We report the case of a 22-month-old boy referred to the Pediatrics clinic due to elevated ALP levels, detected during routine blood tests performed to monitor a previous iron deficiency anemia. The child was asymptomatic, thriving, without clinical signs of liver, bone, renal or systemic disease. There was also no history of medication use. Family history and physical examination were unremarkable. Laboratory investigations revealed an ALP level approximately 20 times the upper limit of normal (9948 U/L, normal age-related value < 500 U/L). In addition, the child had an upper respiratory tract infection 10 days prior to the laboratory evaluation.

After one month of follow-up, ALP levels decreased to 850 U/L, returning to normal levels at three months (236 U/L) without any specific intervention. Liver enzymes, calcium, phosphorus, parathyroid hormone and vitamin D levels were within the normal ranges. Considering the absence of clinical or biochemical evidence of bone or liver diseases and given the spontaneous downward trend in ALP levels over the following months, a diagnosis of BTH was made.

In 1985, Kraut *et al*[5] defined the diagnostic criteria for BTH as follows: 1) age less than five years; 2) variable, unrelated symptoms; 3) no evidence of bone or liver disease on physical examination; 4) no biochemical or laboratory evidence of bone or liver disease except for significantly elevated serum ALP levels; 5) elevated ALP levels in bone and liver fractions; and 6) normalization of ALP levels within four months.

Although benign, BTH often prompts an extensive and unnecessary workup due to its biochemical resemblance to more serious hepatobiliary, renal or metabolic bone disorders – such as cholestasis, chronic renal failure, rickets, juvenile Paget's disease and malignancy.[4] The etiology of BTH remains uncertain, but several reports have suggested a probable infectious origin, particularly in association with recent respiratory or gastrointestinal viral illnesses.[2]

In the case of an incidental finding of high serum ALP level in an otherwise healthy infant or child with no other clinical or laboratory suspicion of bone or liver disease, it is recommended that the ALP level test be repeated within a few months to confirm resolution of the condition.

Awareness of this benign condition is essential to prevent unnecessary diagnostic procedures, hospital referrals, and anxiety among caregivers,[1-4] since there are no clinical sequelae for infants.

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AUTHOR CONTRIBUTIONS

AF: Writing and critical review of the manuscript.
ABS, SL: Critical review of the manuscript.
All authors approved the final version to be published.

PROTECTION OF HUMANS AND ANIMALS

The authors declare that the procedures were followed according to the regulations established by the Clinical Research and Ethics Committee and to the Helsinki Declaration of the World Medical Association updated in October 2024.

DATA CONFIDENTIALITY

The authors declare having followed the protocols in use at their working center regarding patients' data publication.

PARENTAL CONSENT

Obtained.

COMPETING INTERESTS

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Ana FEIO [1], Ana BANDEIRA SANTOS [1], Susana LOPES [1]
1. Serviço de Pediatria. Unidade Local de Saúde do Médio Ave. Santo Tirso. Portugal.
Autor correspondente: Ana Feio. anafeioazevedo@gmail.com
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