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Residents' Corner

Acute-onset muscle weakness in acute leukemia: A common but often missed cause

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An 18-year-old female newly diagnosed with precursor T-cell acute lymphoblastic leukemia presented with progressive pallor requiring recurrent blood transfusions; examination revealed generalized lymphadenopathy and mild splenomegaly. The complete blood count on admission was hemoglobin 7.6 g/dL, total leukocyte count 134,500/cumm (Neutrophils-25%, Lymphocytes-30%, and blasts-45%), and platelet count of 16,000/cumm. The patient was started on the BFM 2002 induction protocol along with prophylaxis for tumor lysis syndrome. On day 3 of therapy, the patient complained of severe bilateral muscle pain and weakness. Examination revealed bilateral lower-limb flaccid paralysis. A serum sample was sent for electrolyte analysis, and an urgent electrocardiogram (ECG) was done. ECG revealed a wide QRS complex with a loss of P waves and a typical "sine wave" pattern [Figure 1]. The patient was immediately started on injection of calcium gluconate, IV glucose insulin drip, salbutamol nebulization, and potassium binding (calcium polystyrene sulfonate) sachet. Later on, biochemistry reports revealed serum potassium 7.6 meq/L, serum calcium 9.6 meq/L, and serum magnesium 2.1 meq/L. Hyperkalemia is a medical emergency that can lead to sudden cardiac arrest; hence, non-specific signs and symptoms such as muscle pain or weakness associated with/without vomiting,

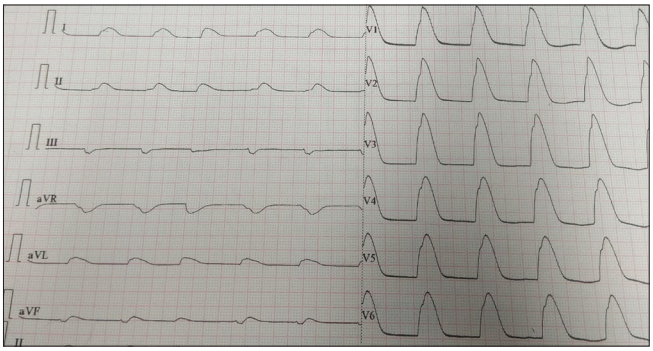

Figure 1: Electrocardiogram of an 18-year-old female newly diagnosed with T-cell acute lymphoblastic leukemia with bilateral muscle pain and weakness, showing atypical sine wave pattern with a wide QRS complexes with loss of P wave.

palpitations, or chest pain should alert the physician to take appropriate measures.[1]

Ethical approval

The Institutional Review Board approval is not required.

Declaration of patient consent

Patient's consent not required as patient's identity is not disclosed or compromised.

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Conflicts of interest

There are no conflicts of interest.

Use of artificial intelligence (AI)-assisted technology for manuscript preparation

The author confirms that there was no use of artificial intelligence (AI)-assisted technology for assisting in the writing or editing of the manuscript and no images were manipulated using AI.

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