

Short Report

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Hemophagocytosis or emperipolesis by lymphoblast after rapid transformation of chronic myeloid leukemia**João Lucas Cruz-Souza^{1,2}; Fernanda Paula de Carvalho¹; Márcio Antonio Wanderley de Melo^{3,4}; Edinalva Pereira Leite¹; Terezinha de Jesus Marques-Salles^{1*}**¹Center of Pediatric Oncohematology, University Hospital Oswaldo Cruz, Brazil.²Laboratory of Immunogenetic, Oswaldo Cruz Foundation, Brazil.³Marcelo Magalhães Laboratory, Brazil.⁴Hematology Department, University of Pernambuco, Brazil.***Corresponding Authors: Terezinha de Jesus Marques-Salles**

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A Male, 11-Years-Old, Admitted In March 2019 With Chronic myelogenous leukemia (CML) in treatment with Imatinib. Three months after diagnosis in outpatient visit was observed increase of splenomegaly and appearing of inguinal and cervical adenomegalies. Bone marrow aspiration revealed 70% of blasts, some of them with hemophagocytosis (Figure 1). The immunophenotyping showed blasts positive for CD10, CD19, CD20, CD22, CD79a, CD45, HLA-DR, indicating transformation to B precursors ALL. Bone marrow karyotype was 46,XY,t(9;22), FISH (BCR-ABL-ES probe) confirmed rearrangement with p210. The patient was treated with higher dose of Imatinib (600 mg/m²), but evolved with bone marrow aplasia and infectious process, being then reajusted to 400 mg/m² with clinical and hematologic improvement. After 30 days had disease aggravation and resistance to

Imatinib. The patient initiated EsPh-ALL 2009 protocol, but in D33 with no remission of disease continued with protocol. In September, during consolidation phase evolved with Central Nervous System infiltration and disease persistence, dying for disease in progress. This patient had no clinical findings of Hemophagocytic Lymphohistiocytosis (HLH) and bone marrow cytology showed the several hematopoietic cells inside blast cells.

HLH is a rare disorder of the immune system result of a direct immune activation process familial or due to infectious diseases, autoimmune diseases, malignancies. At least five features can be seen: 1) fever; 2) splenomegaly; 3) cytopenias at least two or three lineages; 4) hypertriglyceridemia and/or hypofibrinogenemia; 5) hemophagocytosis [1-4].

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Emperipolesis, which is the presence of an intact cell within the cytoplasm of another cell, is most commonly seen within megakaryocytes, the engulfed cells can be any hematopoietic precursor. It also has been described in malignant cells, including blast cells in the blast phase of CML. Leukemia blasts containing hematopoietic cells have been described in ALL with t(12;21), T-ALL and mainly in megakaryocytic with t(16;21) and t(1;22) or monoblastic with t(8;16), but not always associated with HLH[1-5].

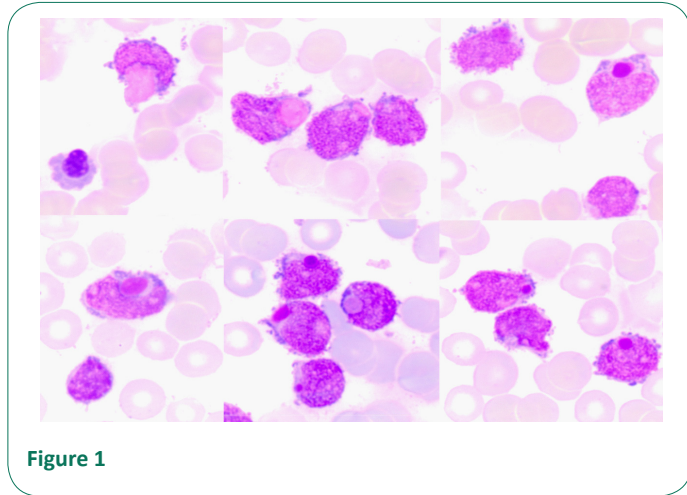


Figure 1

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