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Case Report

Acute Lymphoblastic Leukemia: About a Case Observed at the Renaissance University Hospital in N'Djamena.

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Abstract

Introduction: Childhood acute lymphoblastic leukaemia is the most common paediatric cancer. The objective of our work is to focus on a haematological manifestation such as pancytopenia inaugurating the picture of acute lymphoblastic leukaemia.

Observation: 11-year-old AI, who has been reporting repeated anaemia and haemoglobinuria for 6 months. The clinical examination reveals an alteration of the general condition, severe mucocutaneous pallor, splenomegaly. The initial blood count showed pancytopenia. The diagnosis of acute lymphoblastic leukaemia was confirmed by a myelogram requested in the presence of pancytopenia.

Conclusion: Through this observation, we report the clinical and biological manifestations of acute lymphoblastic leukaemia, emphasizing the interest in eliminating haematological malignancy in the face of any pancytopenia.

Keywords: *Child, pancytopenia, lymphoblastic leukemia, Chad*

Introduction

Acute lymphoblastic leukemia (ALL) is a hematologic malignancy, characterized by intramedullary clonal proliferation of abnormal hematopoietic cells, whose maturation process is blocked at an early stage of its differentiation [1].

It is a pathology that is more frequently encountered in children, accounting for 80% of leukemias and 30% of childhood cancers [1] [11].

The frequency of this disease varies from country to country. In France the incidence is 3.4 cases per 100,000 inhabitants for children under 15 years of age. The lowest incidence of the disease is observed in sub-Saharan Africa (1.18 per 100,000 inhabitants) and the highest is observed in Hispanic populations (5 per 100,000 inhabitants). The peak frequency is between 2 and 5 years of age and the sex ratio is 1 (boys and girls are affected in the same way) [2].

The clinical presentation of ALL is polymorphic. Its analysis is cytological, immunological, cytogenetic and molecular, in order to better identify the characteristics of leukemia cells and to define prognostic criteria, which are essential for therapeutic management [1].

We report the case of an 11-year-old child who was diagnosed with acute lymphoblastic leukemia based on trailing pancytopenia.

Case Presentation

It was a large A.I. child, aged 11 years, female, attending school, weighing 25 kg and measuring 134 cm tall. From the Moundou regional hospital (Southern Chad), following a referral to the Renaissance University Hospital Center (CHU-R) in N'Djamena for treatment of pancytopenia. The initial symptomatology, which began six months ago, was marked by a deterioration in the patient's general condition, recurrent fever, pallor of the integuments, dark urine with multiple blood transfusions during her previous hospitalization (polytransfusion). No leukemogenic risk factors, nor family or personal defects were identified in her. She is the result of a consanguineous marriage and the third of five children. The physical examination on admission revealed a deterioration in general condition (WHO performance index grade 3), normal consciousness (Glasgow: 15), anemic syndrome (severe palmo-plantar and conjunctival pallor). tachycardia at 121 beats/min). She was feverish with a temperature of 39°. Diuresis was preserved with dark urine. The lymph node areas were free, Hackett type III splenomegaly, firm, tender in consistency with a regular anterior surface. The blood count performed on admission revealed pancytopenia (Hemoglobin = 3.5g/dl; Platelets = 59,000/mm^3; ANC = 1129/mm^3).

We also noted leukopenia (2940/mm^3) and blood blastosis made up of lymphoblasts (52%). The myelogram concluded that the marrow was rich, containing 75% lymphoblasts. The cytogenetic study could not be carried out. The extension assessment looking for secondary locations (brain scan, fundus and frontal chest x-ray) came back normal. The diagnosis of acute lymphoblastic leukemia (ALL) was made on the basis of clinical and paraclinical arguments. Management was symptomatic treatment, including iso-rhesus group blood transfusion, antibiotic therapy due to febrile neutropenia and an antipyretic. No anticancer chemotherapy was instituted due to the absence of an adequate management framework. The patient was evacuated abroad after hemodynamic stabilization where she began poly-chemotherapy according to the protocol of the Franco-African Group of Pediatric Oncology for acute lymphoblastic leukemia. After the induction phase which lasted four weeks, it is currently in the consolidation phase which will last three months.

Discussion

Clinical aspects

The clinical symptoms of acute lymphoblastic leukemia are very polymorphous, sometimes very rich, sometimes very reduced. It is represented by bone marrow failure syndrome which is almost always present and tumor syndrome [2] [3].

In our patient, bone marrow failure syndrome was present, it combines an anemic syndrome and an infectious syndrome. The anemic syndrome is often significant and appears quickly, within a few weeks. It results in mucocutaneous pallor, cardiac manifestations (exertional dyspnea, tachycardia), and the infectious syndrome is linked to the importance of neutropenia. Fever is present in half of cases [3]. The most common infectious foci are ENT or cutaneous (angina, stomatitis, pneumonia, superinfected lesions), responding poorly to usual antibiotics. Infections are more often bacterial, rarely viral or fungal [2].

Hemorrhagic Syndrome with spontaneous bleeding was not found in our patient. It is linked to the importance of thrombocytopenia [3]. In our patient, thrombocytopenia was moderate.

The tumor syndrome was incomplete in our patient due to the absence of superficial lymphadenopathy and hepatomegaly expected in 60 to 80% of cases [2]. Only Hackett type III splenomegaly was found in our patient, unlike data in the literature where splenomegaly and hepatomegaly were found and they were present in 75% and 50% of cases, respectively [2].

Paraclinical aspects

The clinical picture is certainly suggestive in acute lymphoblastic leukemia, but the blood count most often presents disturbances which are of great orientation value. Anemia, thrombocytopenia, and variable leukocytosis were reported by all authors [4] [9]. In our study, pancytopenia was revealed in the blood count, suggesting the diagnosis. Confirmation of the diagnosis was provided by the myelogram showing invasion of the marrow by blast cells in our patient. But the absence of cytochemical and immunological studies in our context did not allow us to refine the diagnosis. This diagnostic difficulty is also shared by other authors from countries with limited resources [5,7].

Therapeutic and evolutionary aspects

The patient was evacuated to a foreign country for better care. This was due to the unavailability of a paediatric oncology department and drugs for chemotherapy. Many authors have reported experiencing a similar difficulty [8].

The course of this condition can be influenced by the presence of several factors with a good prognosis: female sex, age between 4 and 14 years, absence of swelling of the hematopoietic organs, absence of major hyperleukocytosis. The cure rate for these forms is about 90% with chemotherapy [3] [10].

Conclusion

Acute Lymphoblastic Leukemia is a serious disease that requires emergency treatment because it can be fatal in a few weeks if left untreated. It is a pathology that is underdiagnosed in our context, due to a lack of means of investigation. Diagnosis should be made as early as possible.

Conflict of Interest

The authors declare no conflict of interest.

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