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A case of acute leukaemia in a 38-years old female

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ABSTRACT:

Leukaemia is cancer that starts in blood-forming tissues, such as bone marrow, and causes large numbers of abnormal blood cells to be produced and enter the bloodstream. The stem cells usually develop into a type of white blood cell called myeloblasts which do not mature into healthy white blood cells. The leukaemia cells are unable to do their usual work and can build up in the blood and bone marrow so there is less space for healthy white blood cells, red blood cells and platelets. Anemia is a major sign but diagnosis is provided only by microscopic examination of peripheral blood smear.

Key words: myeloproliferation, microscopy, anemia.

Introduction

Adult acute myeloid leukaemia (AML) is a cancer of the blood and bone marrow. This cancer is the most common type of acute leukaemia in adults. AML is also called acute myelogenous leukemia, acute myeloblastic leukaemia, acute granulocytic leukaemia and acute nonlymphocytic leukaemia.

Case report

A young women, 38-years old, complained of severe fatigability and epigastralgy.

She presented in the emergency of the hospital and the diagnosis was gastritis and it have been administered the antiacids. The laboratory tests indicated anemia (9g/dl.) but it was not realised microscopy of blood. Because the evolution was unfavorable and at the previous symptoms was added intense anal pain, she was examined by an internist and by a gynecologist for possible problems in the genital area. The diagnosis was not specified. The laboratory tests were restored and revealed: anemia, RBS= 120 div/1 h, increased bilirubin, increased transaminasis.

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Microscopic examination of peripheral blood smear revealed the presence of 90% blasts.

The patient was admitted to the Department of Hematology and after chemotherapy treatment received a bone marrow transplant at Clinical Hospital Fundeni.(Figure 1)

Fig.1- Peripheral blood smear

Discussion

The presented case is about the possibility of misdiagnosis in acute myeloid leukaemia. Many haematological analysis device show a high number of white cells in blood samples, and not enough red blood cells and platelets. Many of the white blood cells may be myeloblasts ("blasts"), which are immature blood-forming cells that are not normally found in the bloodstream. These immature cells do not function like normal, mature white blood cells. These findings may suggest leukemia, but the disease usually is not diagnosed without looking at a sample at microscope.

Since 2003, when an international working group write recommendations for diagnosis in acute myeloid leukemia (AML), considerable progress has been made in elucidating the molecular pathogenesis

of the disease that has resulted in the identification of new diagnostic and prognostic markers [2]. Immunophenotyping using multiparameter (commonly at least 3- to 4-color) flow cytometry is used to determine lineage involvement of a newly diagnosed acute leukemia. Conventional cytogenetics analysis is a mandatory component in the diagnostic evaluation of a patient with suspected acute leukemia, chromosomal abnormalities are detected in approximately 55% of adult AML, methanol/acetic acid-fixed cell pellets should be stored so if cytogenetic analysis fails, fluorescence in situ hybridization (FISH) is an option to detect gene rearrangements, but a blood smear and a bone marrow aspirate are part of the routine diagnostic work-up of a patient with suspected AML. Blood and marrow smears are morphologically examined using a May-Grünwald-Giemsa or a Wright-Giemsa stain. It is recommended that at least 200 leukocytes on blood smears and 500 nucleated cells on marrow smears be counted with the latter containing spicules. For a diagnosis of AML, a marrow or blood blast count of 20% or more is required, except for AML with t(5;17), t(8;21), inv(16) or t(16;16), and some cases of erythroleukemia. Myeloblasts, monoblasts, and megakaryoblasts are included in the blast count. In AML with monocytic or myelomonocytic differentiation, monoblasts and promonocytes, but not abnormal monocytes, are counted as blast equivalents. Erythroblasts are not counted as blasts except in the rare instance of pure erythroid leukemia.

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