



Case Report

Chronic Lymphocytic Leukemia in a Black African Man: A Cameroonian

Raspail Carrel Founou^{a*}, Julius Nwobegahay^b, Regine Gandji^c, Cedrice Tsayem^d, Sandra Yopa^e, Martin Kuete^f, Luria Leslie Founou^g

^aDepartment of Clinical Microbiology, Centre of Expertise and Biological Diagnostic of Cameroon (CEDBCAM), Yaounde, Cameroon

^bMilitary Health Research Centre (CRESAR), Yaounde, Cameroon

^cDepartment of Biological Sciences, Higher Institute of Medical Technology, Yaoundé, Cameroon

^dDepartment of Clinical Biochemistry, Centre of Expertise and Biological Diagnostic of Cameroon (CEDBCAM), Yaounde, Cameroon

^eDepartment of Emergency, District Hospital of Biyem-Assi, Yaounde, Cameroon

^fDepartment of Biomedical and Applied Health, Faculty of Health Sciences, Université des Montagnes, Bangante, Cameroon

^gDepartment of Food Safety and Environmental Microbiology, Centre of Expertise and Biological Diagnostic of Cameroon (CEDBCAM), Yaounde, Cameroon

ARTICLE INFO

Keywords:

Lymphocytic lymphoma

B cell

Flow cytometry

Africa

Chloraminophene

ABSTRACT

Chronic lymphocytic leukemia (CLL) is an acquired monoclonal disorder characterized by a gradual accumulation of functionally incompetent lymphocytes. It generally presents a clonal B cells arrested in the B-cell differentiation pathway that resemble morphologically to mature lymphocytes in the peripheral blood. There is a scarcity of CLL data among sub-Saharan African countries such as Cameroon. We herein report a case of CLL that remained stable over a period of seven years in a 54 years old Black African man. The patient had no history of exposure to toxic chemicals or ionizing radiation and presented with several complaints and clinical symptoms. Clinical and laboratory investigations indicated a CLL in stage B of the Binet staging system. The dosage of chloraminophene led to a favourable outcome in the patient with the reduction of lymphocyte count, size of lymph nodes while relieving pain and improving general status and bone-marrow function of the patient.

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1. Introduction

Chronic lymphocytic leukaemia (CLL) is an acquired monoclonal disorder characterized by a gradual accumulation of functionally incompetent lymphocytes^{1, 2}. CLL is the principal form of leukaemia in developed countries where it represents about 30% of all leukaemia while it is rare in Africa and Asia². Approximately 10-15% of CLL cases are below 50 years of age and adult males being more affected than females. CLL is considered to be similar to one of the indolent non-Hodgkin lymphoma, the mature B cell neoplasm small lymphocytic lymphoma (SLL)². As with most of malignancies, the exact source of CLL is uncertain. In 95% of people with CLL, the change occurs in a B lymphocyte and in the remaining 5%, the cell that transforms from normal to leukemic is a T lymphocyte or a natural killer (NK) cell^{1,2}. It generally presents a characteristic immunophenotype of clonal B cells arrested in the B-cell differentiation pathway that resemble morphologically to mature lymphocytes in the peripheral blood. It usually causes a lymphocytosis that progresses to lymphadenopathy, hepatosplenomegaly and bone marrow failure^{1, 2}. There is a scarcity of clinical and laboratory CLL data among sub-Saharan

African populations including Cameroon. Hence, we report herein a case of CLL that remained stable over a period of seven years in a Black African man in Cameroon

Case Presentation

A 54-year old Black African man initially presented with several complaints of painful and recurrent swellings on the groin, armpit and neck. The patient also complained of shiver, asthenia, fever, anorexia, headaches, pelvic pain, lumbago, cough, sexual asthenia, and difficulty in micturition. He was not on any regular medication and had no history of exposure to toxic chemicals or ionizing radiation. Physical examination was remarkable and revealed cervical and axillary lymphadenopathy and hepatosplenomegaly.

Numerous laboratory exams were performed with a clear thoracic X-ray, negative prostate antigen and negative enzyme-linked immunosorbent assay (ELISA) results for Chlamydia, HIV, Hepatitis B and Hepatitis C. However, complete blood count (CBC) revealed leucocytosis ($155 \times 10^9/L$), lymphocytosis ($139 \times 10^9/L$), and monocytosis ($10.6 \times 10^9/L$). A mild anaemia was also detected with red blood cell (RBC) count of $3.94 \times 10^12/L$, haemoglobin of 11.9 g/L , haematocrit of 37.4% , mean corpuscular volume (MCV) of 94.9 fl , mean corpuscular haemoglobin (MCH) of 30.2

* Corresponding Author : Dr Raspail Carrel Founou

Department of Clinical Microbiology
Centre of Expertise and Biological Diagnostic of Cameroon (CEDBCAM)
Yaoundé, BP. 8242, Cameroon
E-mail: czangue@yahoo.fr

picogrammes, mean corpuscular haemoglobin concentration (MCHC) of 31.8 g/dL along with a mild thrombocytopenia (148 x10⁹/L). The peripheral blood smear showed 5% monocytes, 15% neutrophils and 80% of lymphocytes.

The differential diagnosis was based on peripheral blood 74 flow cytometry that revealed a population of cells which expressed CD5+, CD19+, CD23+, CD20+, CD43+, CD79b-, FMC7, and the surface lambda light chain (weak intensity), consistent with monoclonal B population. CLL was then diagnosed and ascribed to the Matutes score of 5. The signs and symptoms of the patient together with the laboratory investigations further indicated a CLL in stage B according to the Binet staging system. Ibuprofen tablets were prescribed for pain relief and Chloraminophene 2 mL per os per three times per days, then, 2 mg every four weeks was prescribed for CLL treatment. CBC was repeated monthly during the follow-up and the CLL cell population conserved the same phenotype. The leucocytosis gradually reduced with the treatment.

Discussion

The natural CLL history is heterogeneous with death occurring within 2-3 years of diagnosis for some patients and the majority living for 5-10 years. Morbidity is considerable, during the later phase, due to the immunosuppression related to the disease and the complications of therapy. The onset of CLL is usually insidious, and the disorder is generally discovered unexpectedly after a CBC performed for another reason. This patient presented with multiple painful swellings, lumbago, pelvic pain, asthenia and difficulty in micturition.

Numerous autoimmune phenomena may arise in CLL patients with the foremost manifestations being autoimmune haemolytic anaemia (AIHA) and autoimmune thrombocytopenic purpura (ITP). Other complications including a hyper-viscosity syndrome due to highly elevated leucocytes (>300,000/ μ L) as well as splenic sequestration of erythrocytes that may alter function of the central nervous system and/or cause respiratory failure. In the presented case, the patient did not present with noticeable bleeding predisposition but, the patient developed anaemia and thrombocytopenia likely due to secondary bone marrow involvement. Although central nervous troubles were not detected it is likely that a splenic sequestration of erythrocytes did occur, since the RBC counts were steadily below the norm and the patient continued to develop anaemia despite the treatment. The diagnosis of stage B CLL in this 54-year-old Black African, concurs with previous studies. A 2016 study reported 61 years old as the mean age of CLL in Senegal and it revealed that 82.5% of patients were classified at diagnosis as having an advanced Binet stage of B or C3. The study further concluded that CLL may affect Africans at a younger age and with more aggressive forms than in Western populations. These findings thus suggest that routine investigations should be implemented for early CLL diagnosis and to circumvent further fatal complications in African population.

Historically, CLL patients were treated with alkylator-based agent such as chlorambucil and purine analogues (fludarabine). Chlorambucil, an alkylating agent, has been the gold standard for

treatment of CLL patients since 1950's. The peak of plasma concentrations occurs within an hour after ingestion due to its rapid absorption in the gastrointestinal tract and responses are usually attained in 30-70% of untreated patients, although not generally complete responses⁴.

Chlorambucil with or without prednisolone, remains the foremost agent used in CLL, despite the advent of new alternative and combination regimens⁵. In fact, whilst chlorambucil can relieve symptoms associated with progressive CLL, there is no concrete evidence that it actually prolongs survival⁵. Recently, the association of monoclonal antibodies (anti CD-20) with chemotherapeutic treatment, has been shown to improve overall survival and progression-free survival, leading to the recommendation of combined immuno-chemotherapy as front-line treatment of CLL¹. Therefore, in CLL patients without comorbidities, the front-line regimen is fludarabine, cyclophosphamide and rituximab (FCR)⁶. However, the treatment of frail and elderly CLL patients remains challenging due to immune status related to their advanced age, and co-morbidity conditions, that are predictors of poor outcome⁷. While the single-agent chlorambucil is considered an effective and safe treatment option. In elderly and frail CLL patients, a combination regimen of chlorambucil and rituximab is the best option for first-line treatment⁶.

In Cameroon, only chlorambucil single-therapy is available at the moment. The dosage of 2 ml of chloraminophene three times per day, then, 2 mg every 4 weeks led to a favourable outcome in the patient with the reduction of lymphocyte count, size of lymph nodes while relieving pain and improving general status and bone-marrow function of the patient over a three-months period.

Conclusion

In conclusion, we report a case of CLL in a 54-year-old patient. This case demonstrates the importance for the physicians to be aware of the increasing existence of CLL among patients of various ages and without risk factors. It further heightens awareness to maintain a low threshold for diagnostic testing upon low clinical suspicion.

Funding: None

Consent for publication: Written informed consent was obtained from the patient for publication of this case report.

Competing interests: None

Authors' contributions: RCF and LLF conceived and drafted the manuscript. JN, RG, CT, SY and MK contributed in revising the manuscript. All authors have read and approved the final manuscript.

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