

# Chronic Lymphocytic Leukemia in A Black African Man: A Cameroonian Case Report

Raspail Carrel Founou<sup>1\*</sup>, Julius Nwobegahay<sup>2</sup>, Regine Gandji<sup>3</sup>, Cedrice Tsayem<sup>4</sup>, Sandra Yopa<sup>5</sup>, Martin Kuete<sup>6</sup> and Luria Leslie Founou<sup>7</sup>

<sup>1</sup>Department of Clinical Microbiology, Centre of Expertise and Biological Diagnostic of Cameroon (CEDBCAM), Yaounde, Cameroon; <sup>2</sup>Military Health Research Centre (CRESAR), Yaounde, Cameroon; <sup>3</sup>Department of Biological Sciences, Higher Institute of Medical Technology, Yaoundé, Cameroon; <sup>4</sup>Department of Clinical Biochemistry, Centre of Expertise and Biological Diagnostic of Cameroon (CEDBCAM), Yaounde, Cameroon; <sup>5</sup>Department of Emergency, District Hospital of Biyem-Assi, Yaounde, Cameroon; <sup>6</sup>Department of Biomedical and Applied Health, Faculty of Health Sciences, Université des Montagnes, Bangante, Cameroon; <sup>7</sup>Department of Food Safety and Environmental Microbiology, Centre of Expertise and Biological Diagnostic of Cameroon (CEDBCAM), Yaounde, Cameroon

## 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.

**Keywords:** Lymphocytic lymphoma; B cell; Flow cytometry; Africa; Chloraminophene

## 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 Asia [2]. 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. CLL is always a disease of neoplastic B cells that 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 [1,3]. 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 hepato-splenomegaly.

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,

**Correspondence to:** Dr. Raspail Carrel Founou, Department of Clinical Microbiology, Centre of Expertise and Biological Diagnostic of Cameroon (CEDBCAM), Yaoundé, BP. 8242, Cameroon, Tel: +237 6 93 88 81 15; E-mail: czangue@yahoo.fr

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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 picogrammes, Mean Corpuscular Haemoglobin Concentration (MCHC) of 31.8 g/dL along with a mild thrombocytopenia ( $148 \times 10^9/L$ ). The peripheral blood smear showed 5% monocytes, 15% neutrophils and 80% of lymphocytes.

The differential diagnosis was based on peripheral blood 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 typical CLL phenotype. 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 ( $>300,000/\mu L$ ) as well as splenic sequestration of erythrocytes that may alter function of the central nervous system and/or cause respiratory failure. In this 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.

Over the last few decades, CLL therapy has undergone important changes. The first change was the upgrade from single alkylator-based agent to immunochemotherapy. The second improvement

was the introduction of inhibitors of the B cell receptor signalling and other important biological apoptotic and survival pathways. 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 responses [4].

Chlorambucil with or without prednisolone, remains the foremost agent used in CLL, despite the advent of new alternative and combination regimens [5]. In fact, whilst chlorambucil can relieve symptoms associated with progressive CLL, there is no concrete evidence that it actually prolongs survival [5]. 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 CLL. 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 outcome [7]. While the single-agent chlorambucil is considered an effective and safe treatment option, in elderly and frail CLL patients, a combination therapy of chlorambucil and rituximab is the best option for first-line treatment [6]. The combination regimen of rituximab and bendamustine has recently evidenced high efficacy in CLL and should be considered one of the standard treatments offered to CLL patients. Cladribine is another alternative antineoplastic agent used in the treatment of CLL.

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.

## CONSENT FOR PUBLICATION

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

## 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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