*Asian Hematology Research Journal*

*3(1): 24-29, 2020; Article no.AHRJ.54826*

# Demographic and Clinical Enumeration of Patients of CLL: Experience of the Hematology-oncology Department of the Central Hospital of Yaounde

**Chetcha Chemegni Bernard[1,2*], F. Ngo Sack[1,3], A. Sango[1,4], E. Lontsi[1] and N. Njedock[2]**

*[1]Department of Hematology and Medical Oncology, Yaounde Central Hospital, Cameroon.*
*[2]Faculty of Medicine and Biomedical Sciences, Yaounde I University, Cameroon.*
*[3]Faculty of Medicine and Pharmaceutical Sciences, University of Douala, Douala, Cameroon.*
*[4]Faculty of Health Sciences, University of Buea, Buea, Cameroon.*

***Authors' contributions***

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

***Article Information***

*Editor(s):*
(1) Dr. Dharmesh Chandra Sharma, G. R. Medical College and J. A. Hospital, India.
(2) Dr. Alberto Olaya Vargas, Universidad Nacional Autonoma de México, México.
*Reviewers:*
(1) Heba Gamal Abd El-Aziz Nasr, Al-Azhar University, Egypt.
(2) Raghunadharao Digumarti, Homi Bhabha Cancer Hospital and Research Centre, India.
Complete Peer review History: http://www.sdiarticle4.com/review-history/54826

***Original Research Article***

***Received 12 January 2020***
***Accepted 18 March 2020***
***Published 31 March 2020***

## ABSTRACT

The objective of this study was to identify the demographic and clinical features of patients with chronic lymphocytic leukemia (CLL), followed at the Central Hospital of Yaoundé (HCY) over a period of 6 years (January 2012 to December 2018).

**Methodology:** This retrospective analytical study was carried out at the Central Hospital of Yaoundé at the Department of Hematology and Medical Oncology. We have selected from the archives the files of patients with chronic lymphocytic leukemia confirmed by blood immunophenotyping over a period of 6 years. Were includes the records of patients with documented CLL. The variables studied were: Epidemiological, clinical data and blood immunophenotyping. The data was analyzed using SPSS 20 software.

**Results:** Thirty-eight (38) patients were retained, all of them were of proliferation B. Their mean age was 58.5 years (52.50-68.25) with a female predominance (65.78%). The education level was that of primary school (41.66%). Marital status was dominated by the married couples (66.66%). Most of

**Corresponding author: E-mail: chetcha@yahoo.fr;*

the patients were from the central region (58.62%). Eight patients (27.58%) were housewives. The most clinical presentation was splenomegaly (68.42%). White blood cells ranged from 48150 to 131075 / $mm^3$ with an average of 75850 / $mm^3$; the average hemoglobin level was 9 g / dl (7.175 and 11.975 g / dl) and that of platelets was 134000 / $mm^3$ (81250 to 174,250 / $mm^3$). According to the Matutes classification, 81.49% had a score of 5 and 18.51% of 4. Binet stage C disease was predominant in 60.52% of the cases.

**Conclusion:** Chronic lymphoid leukemia is a pathology that is still little-known; patients reach an advanced stage of the disease with splenomegaly and anemia. The limited technical platform and financial difficulty do not allow to have the optimal balance sheet in our context.

*Keywords: Chronic lymphoid leukemia; epidemiology; clinic, central hospital; Yaoundé; Cameroon.*

## 1. INTRODUCTION

CLL is a disease linked to the malignant monoclonal accumulation of mature lymphocytes B CD5+ with blood and bone marrow invasion, secondary to excessive proliferation and apoptosis defect [1]. It is one of the B lymphoid cell tumors mature according to the WHO classification 2016 and classified in the group LLC/lymphocytic lymphoma [1]. It preferentially reaches the adult after 50 years [2]. Its evolution is chronic and untreatable [2]. In 95% of cases, it is a B proliferation and in 5% of a T-cell. In Africa and Cameroon in particular, due to diagnostic difficulties, there are not many studies carried out on these pathologies. This work was designed to determine the epidemiological, clinical, and biological profiles of the LLC at Yaounde Central Hospital.

## 2. METHODOLOGY

We conducted an analytical retrospective study in the Department of Clinical Hematology and Medical Oncology at Yaounde Central Hospital. A comprehensive consecutive sampling over 6 years, from January 2012 to December 2018 has been done. Included were the medical records of patients followed in this ward who had been selected for a diagnosis of CLL on the basis of cytologic examinations. The variables studied included: epidemiological data; socioeconomic level based on indirect criteria (occupation, level of study and the ability to perform the required examinations), clinical, type of CLL, hematological check-up data and blood immunophenotyping. The data was encoded and processed using Epiinfo7 and Excel 2007 software, then analyzed using SPSS 20 software.

## 3. RESULTS

Our inclusion criteria allowed us to retain 38 files. Patients ranged in age from 52 to 68 years with an average of 58.5 years. There was a female predominance with a sex ratio of 0.52 (25 women for 13 men).

The most represented level of education was primary in 41.6% (Fig. 1).

There was a strong representation of married men and women at 66.66% (Fig. 2).

The majority of nationals from the Central region were represented (58.62%). The housewife occupation predominated in 27.58% of the cases. The patients had various clinical presentations as described in Table 1 the most common was splenomegaly.

The white blood cells varied between 48,150 and 131,075 / $mm^3$ with an average of 75,850 / $mm^3$, an average hemoglobin level of 9 g / dl (7.175 and 11.975 g / dl) and platelets at 134,000 / $mm^3$ (81,250 to 174,250 / $mm^3$).

For the certainty diagnosis, all patients had performed immunophenotyping (100%). The evaluation of the MATUTES score in the patients found that 81.49% had a score of 5 and 18.51% of 4 (Fig. 3).

In Binet's classification, stage C was dominant in 60.52% of our sample (Fig. 4)

## 4. DISCUSSION

The annual frequency of 6.33 cases obtained is clearly lower than those reported by other authors. Indeed, Boukhris et al reported in 2013 in Tunisia an annual average of 23 cases over 4 years, Malam-Abdou B et al. reported an annual frequency of 8.25 cases in 2018 in Niger [3].

Several parameters could explain the low prevalence of CLL including the inadequacy of the technical platform and the low health coverage.

The average age of patients with CLL was 58.5 years with extremes ranging from 52 to 58 years.

The disease therefore mainly affected adults. This corroborates with the results of KG Koffi et al in Cote d´Ivoire in 2009 who found an average age of 62 years for extremes ranging from 38 to 84 years; Malam-Abdou B et al. in Niger reported in 2018 an average age of 53.25 years with extremes ranging from 30 to 82 years [3]. Another Nigerian study, that of Ali OZM et al, reported a higher prevalence of the disease between 40 and 60 years in 2000. Cindy G had reported at the end of a study carried out in 2008 at the university of Henri Poincarré that CLL-B is essentially a disease of the elderly and that the median age of the patients was 72 years.

The female sex was more represented with a sex ratio of 0.52. This result is different from that reported by most of the literature. The majority of publications have highlighted a higher frequency of the disease in men than in women with sex ratios varying between 1.5 and 3: Triadou P in France (2/1) [4], Khalifa M in Tunisia (3/1) [5], KG Koffi in Cote d'Ivoire (1.25). Furthermore, this result corroborates with that of Malam-Abdou et al in Niger who highlighted a sex ratio of 0.47 with a strong representation of the female sex [3]. This could be explained by the strong presence of female subjects in our populations, especially in adulthood.

The most frequent clinical presentation associated: splenomegaly (26 patients or 68.4% of cases); lymphadenopathy in 15 patients (39.47%); hepatomegaly (34.2%) and asthenia in 28.9% of cases. Other authors such as Trouvade P and Cindy G had also found the high frequency of ADP and splenomegaly in CLL as well as the association of hepatomegaly with ADP in the foreground respectively in 70 and 87% of cases, then splenomegaly in 20 and 54% of cases and PMH in 10 and 14% of cases.

In many other studies, ADP and PMS frequencies were reported in more than 70% of the cases and hepatomegaly in more than 25% of the cases.

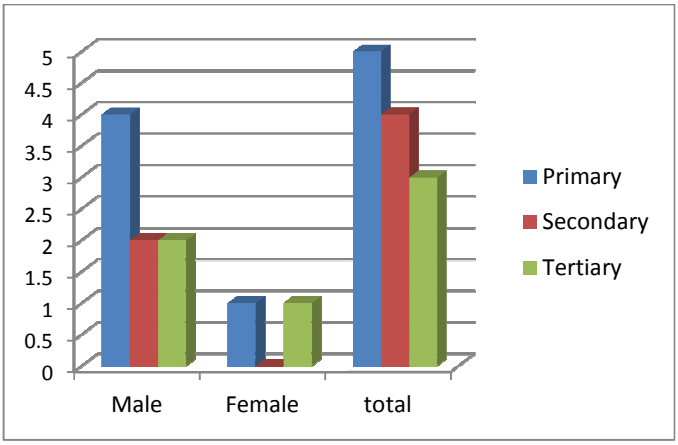


**Fig. 1. Breakdown of patients by level of education**

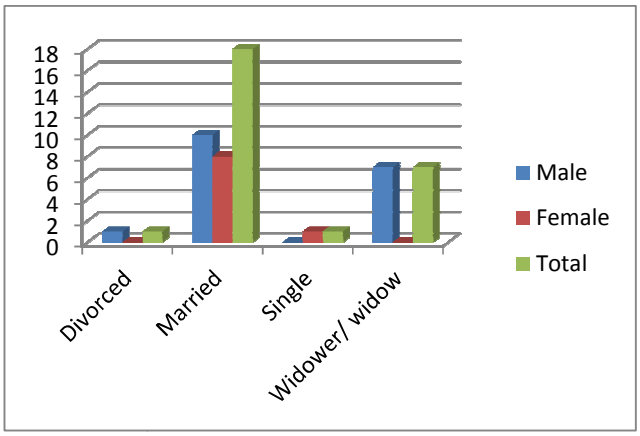


**Fig. 2. Marital status**

**Table 1. Clinical characteristics**

| Caracteristics | Male | Female | Total | P value |
|---|---|---|---|---|
| Asymptomatic | 1(2.631579) | 1(2.631579) | 2(5.263158) | 1 |
| Fever | 2(5.263158) | 4(10.526316) | 6(15.78947) | 1 |
| Asthenia | 1(2.631579) | 10(26.315789) | 11(28.94737) | 0.0597 |
| Earlysatiety | 2(5.263158) | 1(2.631579) | 3(7.894737) | |
| Anorexia | 0 | 2(5.263158) | 2(5.263158) | 0.5377 |
| Weightloss | 4(10.526316) | 3(7.894737) | 7(18.42105) | 0.2025 |
| Musculoskeletalpain | 2(5.263158) | 2(5.263158) | 4(10.526316) | 0.5949 |
| Abdominaldiscomfort | 6(15.78947) | 11(28.94737) | 17(44.73684) | 1 |
| cough | 1(2.631579) | 3(7.894737) | 4(10.526316) | 1 |
| Headache | 2(5.263158) | 1(2.631579) | 3(7.894737) | 0.2651 |
| MucocutaneousPalor | 2(5.263158) | 3(7.894737) | 5(13.15789) | 1 |
| Chestfindings | 2(5.263158) | 1(2.631579) | 3(7.894737) | 0.2651 |
| Hepatomegaly | 6(15.78947) | 7(18.42105) | 13(34.21053) | 0.3005 |
| splenomegaly | 10(26.315789) | 16(42.105263) | 26(68.4210) | 0.4859 |
| Lymphadenopathies | 8(21.05263) | 7(18.42105) | 15(39.47368) | 0.07939 |
| **Number of Lymph Node areas** | | | | |
| <3 | 8(21.05263) | 21(55.26316) | 29(76.31579) | 0.2262 |
| ≥3 | 5(13.15789) | 4(10.52632) | 9(23.68421) | |
| Recurrentinfections | 0 | 2(5.263158) | 2(5.263158) | 0.5377 |
| Bleeding diathesis | 0 | 0 | 0 | |

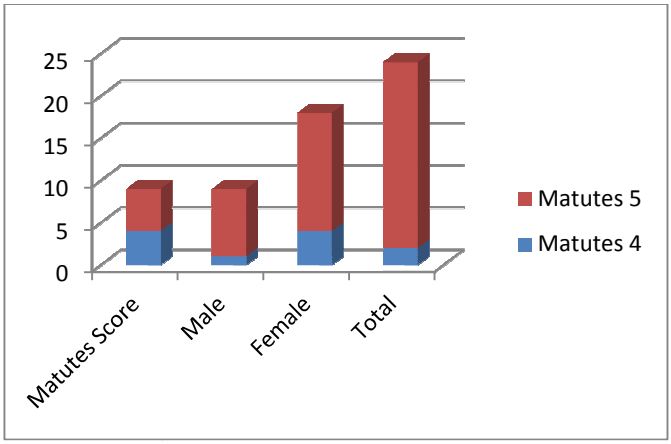


**Fig. 3. Matutes score**

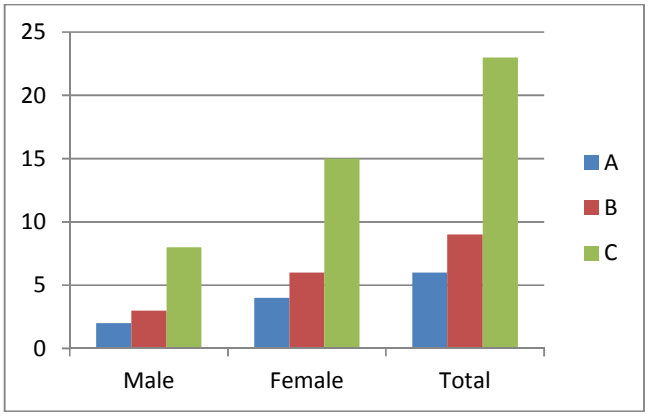


**Fig. 4. Binet classification**

**Table 2. Biological criteria**

| Characteristic | Male | Female | Total | P value |
|---|---|---|---|---|
| WBC ($mm^3$) | 84950 (61250 – 141500) | 57015 (48150 – 109270) | 75850 (48150 - 131075) | 0.4174 |
| L ($mm^3$) | 69500 (32500-122750) | 47300 (15312-84957) | 53852.0 (18874.5-86507.5) | 0.4342 |
| N ($mm^3$) | 4650.00 (3150.00-6660.75) | 5660.00 (3393.25- 8025.00) | 5410.00 (3322.75- 8025.00) | 0.6654 |
| M ($mm^3$) | 1900 (750-3700) | 1600 (800 4264) | 1800 (775-4141) | 1 |
| B($mm^3$) | 0 | 0 | 0 (0-250) | 0.6197 |
| E($mm^3$) | 658.5 (0.0-1900.0) | 0 (0-269) | 96.00 (0.00-648.75) | 0.1448 |
| BLASTES | 2.00(0.75- 4.25) | 4.000 (0.025-9.500) | 3.000 (0.025- 8.500) | 0.5529 |
| RETICULOCYTES | 174580 (174580 -174580) | 86960 (0-101925) | 89320 (0-139740) | 0.3226 |
| HGB | 10.650 (8.100- 11.975) | 10.650 (8.100- 11.975) | 9.050 (7.175- 11.450) | 0.3136 |
| PLT ($mm^3$) | 126500 (79000- 151000) | 143000 (81250-191250) | 134000(81250- 174250) | 0.387 |
| SmudgeCells | 5(13.15789) | 6(15.78947) | 11(28.94737) | 0.4573 |
| Gammaglobulins | 16.250 (16.225- 16.275) | 16.650 (15.475- 17.825) | 16.250 (15.725- 16.975) | 1 |
| B2Microglobulin | 12.10 (10.05- 14.15) | 4.62350 (3.84175- 5.40525) | 7.09350 (5.40525- 10.05000) | 0.3333 |
| **Lymphocytes** | | | | |
| <25000 | 2(5.714286) | 9(25.714286) | 11(31.42857) | 0.3854 |
| 25000 – 100 000 | 6(17.142857) | 10(28.571429) | 16 (45.71429) | |
| ≥100 000 | 4(11.42857) | 4(11.42857) | 8(22.85714) | |
| **HGB** | | | | |
| ≤11 | 7(19.44444) | 17(47.22222) | 24(66.66667) | 0.4793 |
| >11 | 5(13.88889) | 7(19.44444) | 12(33.33333) | |
| **PLT** | | | | |
| ≤100 000 | 4(11.76471) | 8(23.52941) | 12(35.29412) | 1 |
| >10000 | 8(23.52941) | 14(41.17647) | 22(64.70588) | |

In the hemogram, there was a hyperleukocytosis which varied between 48,150 / $mm^3$ and 131,075 /mm3 with an average of 75,850 / $mm^3$; hemoglobin at 9.05 g / dl on average, with extremes between 7.1 and 11.4 g / dl; platelets varying between 81 250 / $mm^3$ and 174 250 / $mm^3$ with an average thrombocytopenia at 134,000 / $mm^3$.

In our sample, 11 patients or 31.42% had lymphocytosis less than 25,000 / mm3; 16 patients or 45.7% had lymphocytosis between 25,000 and 100,000 / $mm^3$; 8 patients or 22.8% had lymphocytosis greater than 100,000 / mm3. These results correlate with those reported by Bouideghaghen et al in Béjaia in 2018 which found on the first NFS performed in patients, 70% of them had a rate between 5000 / $mm^3$ and 50,000 / $mm^3$; 15% a rate between 50,000 / $mm^3$ and 100,000 / $mm^3$ and 15% a rate higher than 100,000 / $mm^3$.

There was no statistically significant correlation between splenomegaly, lymphadenopathy and lymphocytosis. Indeed, after an analysis of the clinical course of patients, it was found that the high level of lymphocytosis does not always and significantly correlate with a larger splenomegaly or with a high number of lymphadenopathies.

Immunophenotyping was performed in 100% of the patients in our sample. The MATUTES score evaluation found that 81.49% had a score of 5 and 18.51% had a score of 4.

The evolutionary stages of CLL according to the Binet classification are variable according to the authors. Stage C was the most encountered in our patients (60.58% of cases) whereas it is 9% respectively; 28.5% and 29.3% according to Troussard, KG Koffi and Boukhris S. The high rate of advanced stages could be explained in our context by the late consultation leading to a late diagnosis.

## 5. CONCLUSION

Chronic lymphocytic leukemia is a malignant hemopathy present in Cameroon; it particularly affects adult subjects of both sexes. Clinically, it is characterized by a tumor syndrome with lymphadenopathy and splenomegaly; and with lymphocyte biology. In most cases, patients reach an advanced stage of the disease. The limited technical platform and the financial difficulty do not allow an early diagnosis and an optimal assessment in our context.

## CONSENT

As per international standard or university standard, patient's written consent has been collected and preserved by the author(s).

## ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

## REFERENCES

1. Chronic lymphocytic leukemia. Available:http://www.hematocell.fr/index.php/ teaching-de-lhematologie-cellulaire/62-teaching-de-lhematologie-cellulaire-les-principales-maladies-hematologiques/pathologie-lymphoide/121-leukemia-lymphoid-chronic-llc
2. Chronic lymphoid leukemia. Leblond V. Rev Prat. 2016;66(9):1015.
3. Malam-Abdou B, Brah S, Djibrilla A, Andia A, Chefou M, Mahman Sani MA, Beydou S, Daou M, Adehossi E. Chronic lymphocytic leukemia in Niger: a study of 99 cases in the service of Onco-Hematology of the National Hospital of Niamey Health Sciences and Diseases. 2018;19(2).
4. Triadou P. Annals of Clinical Biology. 2000;58(1):19-28.
5. Khalifa M, Chehata S, Laatiri M, Grira CA, Gharbi O, Kortas M. Epidemiological, clinical and therapeutic aspects of chronic lymphocytic leukemia about 120 cases. Medical Tunisia; 2000.



*Peer-review history:*
*The peer review history for this paper can be accessed here:*
*http://www.sdiarticle4.com/review-history/54826*