Clinico-hematologic Profile and Treatment Response in Chronic Lymphocytic Leukemia Patients at Khartoum Oncology Hospital, Sudan

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INTRODUCTION

Chronic lymphocytic leukemia (CLL) is a malignant disease characterized by an accumulation of monoclonal mature small B lymphocytes in bone marrow, blood, and lymphoid tissues, which causes anemia, neutropenia, and thrombocytopenia. [1]. CLL is a heterogeneous disease where some patients have stable clinical course and others have an aggressive course of the disease [2]. CLL management focuses on stratification of patients according to the clinical staging that enables physicians to decide the best therapeutic strategies and can help predict a patient's prognosis [3,4]

OBJECTIVE

The objectives of this study were to determine the clinical characteristics and hematological parameters in Sudanese CLL patients attending the Khartoum Oncology Hospital at diagnosis and to assess response to treatment.

METHOD

This was a retrospective cross-sectional study, conducted at Khartoum Oncology Hospital, Sudan, including 169 CLL patients diagnosed according to the International Workshop on Chronic Lymphocytic Leukemia (IWCLL) from January 1, 2018 to December 31, 2022.

The clinical staging of the patients was performed using the Rai classification system. The Rai staging system classifies CLL into 5 stages based on the lymphocytosis > 15 × 109/L and whether or not the patient has lymph nodes enlarged, an enlarged liver or spleen, anemia (Hb level < 11 g/dL); or thrombocytopenia (platelet count <100 × 109/L) [3].

The modified Rai classification system classifies CLL into three separate risk groups; patients who are in Stage 0 are defined as having low-risk disease, patients who are in Stage I and II are defined as having intermediate-risk disease and patients who are in Stage III and IV defined as having high-risk disease [4]

RESULTS

Out of 169 CLL patients, there were 98 (58%) males, and 71 (42%) females with a male-to-female ratio of 1.4:1.0, with mean age at presentation of 60.3 years (range, 35-85 years).

The most frequent clinical finding was lymphadenopathy (75.7%) followed by splenomegaly (58.0%) and hepatomegaly (40.2%). Anemia and thrombocytopenia were present in 73.4% and 32.5% of patients, respectively. Figure1

The majority of patients presented with advanced Rai stage: 67 patients (39.6%) in stage IV and 62 patients (36.7%) in stage III. There was no significant association between clinical stage and age or gender. There was a highly significant association between anemia and the clinical stage at presentation (P<0.05). Table 1

The treatment response was evaluable for 61 patients only, 4 patients (6.6%) achieved complete remission, 15 patients (24.6%) achieved partial remission, 26 patients (42.6%) had stable disease and 16 patients (26.2 %) had CLL progression. Figure 2

Table 1: Clinical staging of CLL patients

Characteristics	CLL patients (n = 169)
Rai staging system, n (%)	
Stage 0	9(5.3%)
Stage I	17(10.1%)
Stage II	14(8.3%)
Stage III	62(36.7%)
Stage IV	68(39.6%)
Modified Rai stage, n (%)	
Low-risk group	9 (5.3%)
Intermediate-risk group	31 (18.3%)
High-risk group	129 (76.4%)

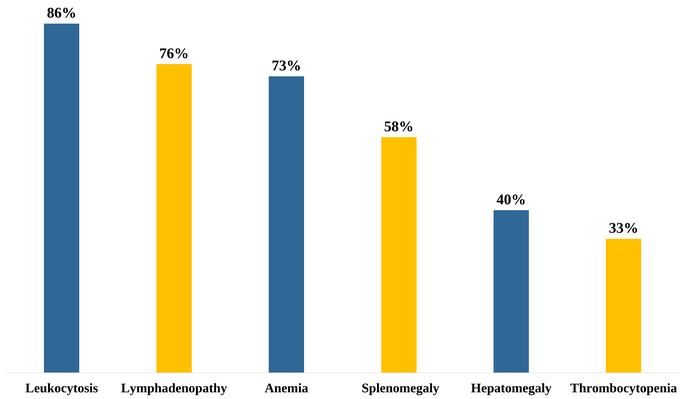


Figure1: Clinical and hematological parameters of the CLL patients

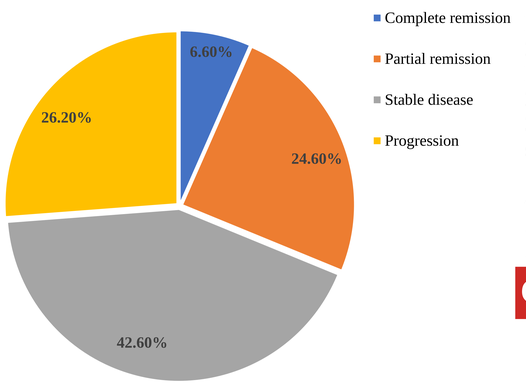


Figure 2: Treatment response of CLL patients

CONCLUSIONS

The current study showed that in Sudan, CLL is a disease of the elderly, with male predominance consistent with data reported in the literature. The majority of patients presented with advanced clinical stage. Anemia was significantly associated with the clinical stage. The overall treatment response rate was 31.2%.

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