CD4 Counts and Viral Loads Association in HIV-Associated Lymphoma

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Introduction

Lymphoma is a leading cause of death in HIV patients, with up to 400-fold increased incidence compared to HIV-negative individuals. There tends to be a downtrend in CD4 lymphocyte counts noted at the diagnosis of lymphoma in HIV patients, despite virologic control. Some reports have described a preceding downtrend of CD4 counts almost a year prior to lymphoma diagnosis.

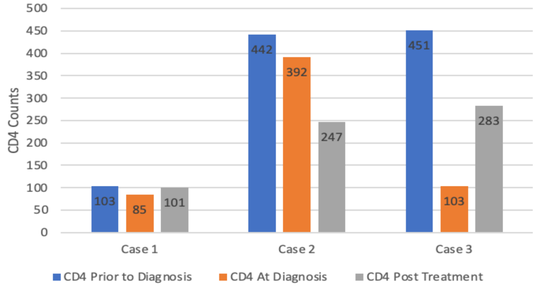
Objective

The pathophysiology of this CD4 decline remains largely unknown, and the implications of this finding on prognosis, infection risk, or response to therapy are unclear. Further exploration regarding this association between CD4 counts and HIV associated lymphoma is warranted and we attempt to do this is this 3 patient case series.

Methods

We performed a retrospective chart review of patients with HIV-associated lymphoma treated at the UTMB oncology clinic between 2020 to 2021 with low CD4 counts at the time of diagnosis of HIV associated lymphoma and monitored their course throughout the management. We identified 3 patients with HIV-associated lymphoma, all notably with diffuse large B-cell lymphoma (DLBCL). We analyzed their CD4 counts and HIV viral loads from the time of diagnosis to 1 year after treatment completion, their rates of infectious complications, and lymphoma treatment outcomes.

CD4 Counts Throughout Treatment Course



Case Descriptions

Case 1 : 52 year old male with stage II Diffuse Large B Cell Lymphoma
Case 2 : 39 year old male with stage IV Diffuse Large B Cell Lymphoma
Case 3 : 71 year old male with stage III Diffuse Large B Cell Lymphoma

Results

While all patients had varying CD4 counts prior to the diagnosis of DLBCL, there was a marked drop in the CD4 count at the time of diagnosis of Lymphoma while still having undetectable viral load at lymphoma diagnosis. All received chemo-immunotherapy, predominantly the R-EPOCH regimen, and standard infection prophylaxis according to guidelines and achieved complete remission. Two patients presented with a significant rise in absolute CD4 levels throughout the treatment course, whereas 1 had minimally rising levels initially that then declined. The decline in Patient 2 was attributed to non-compliance with HIV medications. Patient 3 relapsed 6 months after and received salvage chemotherapy and was transferred to another facility for care.

Discussions

There is a lack of clear explanation for CD4 lymphopenia decline prior to and at the time of HIV-associated lymphoma diagnosis, despite optimal HIV control. Lymphocyte recruitment to lymphomagenesis sites may contribute to the low CD4 count in peripheral blood, which may explain their preceding decline.

Next Steps

Low CD4 counts with undetectable viral load and any new B symptoms should raise suspicion for any undiagnosed lymphoma and careful screening can be performed. This might help with early-stage diagnosis and with improvement in prognosis. Large-scale studies are needed to better evaluate the implications of our findings and make potential changes to the management algorithm of HIV-associated lymphoma.

Keywords/Patients

Keywords: ABCL, HIV, CD4 count, lymphoma
Patients: Hematology and Oncology Clinic

References

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