LYMPHOMAS

Lymphomas have become the most common AIDS-related cancer in the developed world, constituting over 50% of all AIDS defining cancers and the most common cause of cancer-related death in HIV infected individuals.

**Lymphocyte-to-monocyte ratio (LMR), neuphil-to-lymphocyte ratio (NLR) and platelet-to-lymphocyte ratio (PLR) are simple and effective biomarkers for both host immune homeostasis (e.g., T cell, tumor-infiltrating lymphocytes) and the tumor microenvironment (e.g., AEC, tumor-associate macrophages) that may predict clinical outcome in non-Hodgkin lymphoma.

However, the association between these hematologic parameters and prognosis of HIV-associated lymphomas (HLV-I) has not been evaluated.

**METHODS**

Observational retrospective multi-center cohort. All HIV-infected patients (pts) with a diagnosis of non-Hodgkin Lymphoma (NHL) between Jan 1, 2000 and Dec 31, 2013 in the ICOHL cohort or in four collaborating hospital databases were included. Patients were eligible if they had available absolute lymphocyte count, absolute monocyte count, and absolute platelet count at diagnosis of NHL. We chose the cut-off of 2.11 for LMR, 150 and 300 for PLR, and 4.35 for NLR, as reported in general population.

Characteristics at diagnosis were compared according to parameters strata. Overall survival (OS) estimates by KM and predictors of OS by multivariable Cox regression after adjusting for main potential confounders (calendar year, age, gender, HIV-confinced status, IPI score, rituximab use CD4+ T cell count and ART use) were performed.

**RESULTS**

Two hundred and sixty-one HIV-NHL pts were included (84% male, median age 46 years, median CD4+ cell count at diagnosis 210 cells/mm³). All pts were considered for PLR analysis, while 191 for NLR and 177 for LMR.

Low LMR at diagnosis (<2.11) was significantly associated with HCV-co-infection, poor Eastern Cooperative Oncology Group Performance Status (ECOG PS) and low CD4+ T cell count (table 1). Pts with PLR>150 exhibited significantly higher prevalence of HBV co-infection, poor ECOG PS and low CD4+ T cell count(table 2), while pts with high NLR (>4.35) showed significant lower prevalence of HIV co-infection (table 3).

After a median follow-up of 28 months (IQR 9-72), 104 (39.8%) NHL patients died by 3-years from diagnosis, the cumulative risk of death was 62% (95%CI 48, 77) versus 27% (95%CI 19, 36) for LMR<2.11 and >2.11; 48% (95%CI 31, 64) versus 33% (95%CI 25, 40) for NLR>4.35 and ≤4.35; 95%CI 43, 66) versus 34% (95%CI 25, 42) versus 35% (95%CI 22, 49) for PLR<150, 150-300, >300(Figure 1).

At 3-years, low LMR was independently associated with increased risk of death after a diagnosis of NHL (table 4).

Our analysis shows that decreased LMR and PLR are associated with poorer prognosis in HIV+ patients with NHL and show an adverse effect on NHL-HIV+ patients.

LMR and PLR at diagnosis are simple tool that assess the host’s immune homeostasis and the tumor microenvironment. A decreased LMR and PLR represent a decreased lymphocyte count and/or an increased monocyte or platelet count. Therefore, LMR and PLR can reflect the status of pro-tumor and antitumor ability in response to inflammation.

The evidence by our study that LMR and PLR could be applied also to HIV-infected population affected by NHL supports its use in stratification of patients and determination of specific therapeutic plans.

**CONCLUSION**

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**REFERENCES**