Abstract: PB2543

Title: REPEATED COVID-19 EVENTS IN PATIENTS WITH CHRONIC LYMPHOCYTIC LEUKEMIA

Abstract Type: Publication Only

Topic: Chronic lymphocytic leukemia and related disorders - Clinical

Background:

During the current pandemic, the rate of subsequent COVID-19 events recorded in the general population is 4.2%. Limited information is available on the vulnerability to a repeated SARS-CoV-2 infection of patients with Chronic Lymphocytic Leukemia (CLL). Data on the risk of a new COVID-19 event is relevant to refine preventive strategies in patients with impaired immune-functions.

Aims:

This retrospective/prospective, observational study aimed to evaluate the rate, morbidity and severity of SARS-CoV-2 reinfections in CLL patients managed at the Hematology Unit of the Sapienza University of Rome.

Methods:

CLL patients who had experienced a first COVID-19 event between March 2020 and September 2023 were included in this study. In this patient population reinfection was defined as a new COVID-19 diagnosis occurring 90 days after the prior event.** Based on the epidemiologic data of the COVID-19 surveillance in Italy, we identified five pandemic phases. Second COVID-19-Free Survival probability was measured starting from the third month following the first COVID-19 event to the subsequent event, death or last follow-up.

Results:

Two hundred and twenty consecutive patients with CLL experienced COVID-19 and were included in this study. Among them, 210 (95%) patients survived, and 78 (37%) after a median time of 6.6 months (IQR 5.4-8.5) from the first COVID-19 event patients received an additional dose of the SARS-CoV2 vaccine. A novel COVID-19 event was recorded in 52/210 (25%, Figure 1) patients after a median time of 12.2(IQR 7.5-18.7) months from the first event .No patients experienced a subsequent COVID-19 event before the Omicron wave. The 12-month Second COVID-19 Free Survival probability was 78.8%. In univariate analysis, a high comorbidity burden (CIRS≥6) [HR 2.24, p=0.013], active treatment for CLL [HR 3.54, p<0.001], and TP53 aberrations [HR 1.98, p=0.050] were associated with a significantly shorter Second COVID-19-Free Survival, while no significant impact was exerted by Tixagevimab/cilgavimab prophylaxis (p=0.089) and an additional dose of the SARS-CoV2 vaccine given after the first event (p=0.086). In multivariate analysis, ongoing CLL treatment emerged as the only independent factor with a significant impact on the Second COVID-19 Free Survival [HR 3.20, p<0.001]. At the time the new COVID-19 event 23 (44%) patients were on treatment (BTK inhibitors, 79%; venetoclax-based regimens, 17%), while 5 had been previously treated. When the clinical characteristics and outcomes of the first COVID-19 event (210 patients) and the subsequent event (52 patients) were compared, the latter was associated with significantly lower rate of pneumonia

(8% vs. 21%, p=0.008) and hospitalization (10% vs. 25%, p<0.001) than the first one. Moreover, no patients who has a subsequent event required Intensive Care Unit cares and no fatal cases were recorded. Given the different availability of treatment resources between the first and second event, antiviral agents and monoclonal antibodies were more frequently administered at the time of the subsequent COVID-19 episode (44% vs. 29%, p=0.035).

Summary/Conclusion:

Our results show that in patients with CLL, particularly in those on treatment, subsequent COVID-19 is not a negligible event. Given the lower virulence of Omicron variants, the beneficial impact of prior vaccination, and

availability of effective treatments, the second COVID19 was clinically mild. Preventive strategies, prompt diagnosis and treatment of COVID-19 are still recommended in CLL patients during the current "near-endemic" era of SARS-CoV-2.

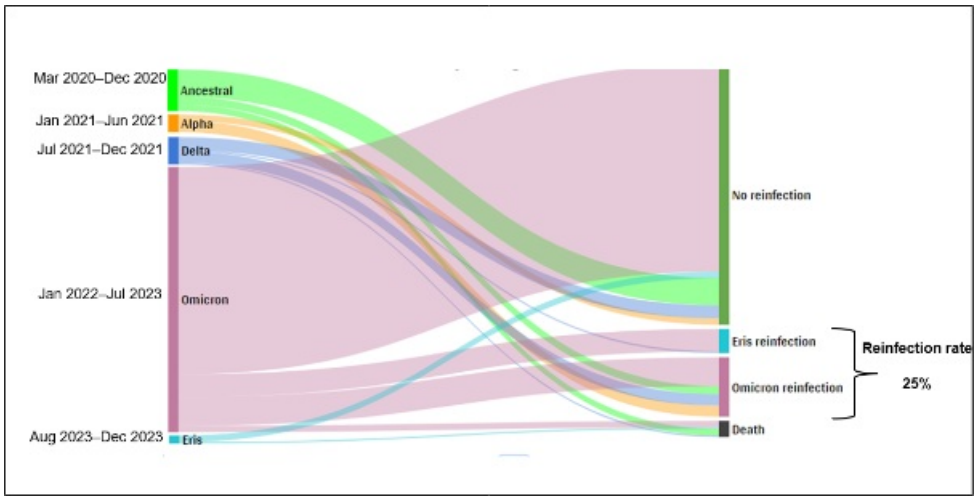

Figure 1. Graphical representation of reinfection rate according to the pandemic phase of the primary SARS-CoV2 infection

Keywords: Chronic lymphocytic leukemia, COVID-19, Vaccination