Preliminary results from the BHS COVID19 registry: epidemiology of severe COVID19 in Belgian patients with an underlying hematological disease

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Objectives

Coronavirus infectious disease-19 (COVID19), the disease caused by the SARS-CoV-2 virus, is currently responsible for a worldwide pandemic. The virus is highly contagious, has a relatively long incubation period, and has a high mortality of up to 15% in the elderly or patients with comorbidities. Several reports have shown that patients with hematological malignancies are at significantly increased risk of developing severe COVID19 disease.

With this study we aimed to investigate whether hematology patients were at an increased risk of being hospitalized for COVID19 compared to the general population, and to identify specific risk factors for mortality or other severe complications during the first wave of COVID19 in Belgium.

Methods

We performed a retrospective study across 42 different Belgian hematology centers. We included all adult patients with an underlying hematological disorder that were hospitalized between January 1st and June 1st 2020 and had a positive SARS-CoV2 PCR. We collected information on the type of hematologic disease, demographics, comorbidities, prior treatments, and outcomes (survival, intensive care unit [ICU] admission, invasive ventilation, or development of acute respiratory distress disorder). We compared the distribution of the underlying malignancies with the expected prevalence as reported by the Belgian Cancer Registry (BCR).

Results

Until now, we collected data from 220 patients (190 with underlying [pre-]malignancy, 15 with non-malignant disease, and 15 with both). Based on the prevalence of hematological malignancies as recorded by the BCR, we estimate that one in every 250 patients with a hematologic malignancy was hospitalized for COVID19 during the first wave. This rate was significantly higher than the observed hospitalization rate in the general Belgian population, based on Sciensano data.

The median age of our cohort was 70.6 years (IQR: 62.5 – 79.1, range: 18.1 – 94.0 years), with 66% being male. The majority never smoked (46%) or had quit smoking (23%), 5% were current smokers. For the remaining 26%, the smoking status was unknown.

The distribution of underlying malignant diseases was as follows: non-Hodgkin lymphoma excluding CLL (n=58, 26%), multiple myeloma (n=40, 18%), chronic lymphocytic lymphoma (n=34, 15%), myeloproliferative neoplasia (n=28, n=13%), myelodysplastic syndrome (n=22, 10%), acute leukemia (n=20, 9%), Hodgkin lymphoma (n=4, 2%), and other malignancies (n=14, 6%). Compared to the 15-yr prevalence of hematological malignancies registered in Belgium (2004-2018), we noticed significantly more patients with multiple myeloma (18% versus 10%, p<0.001) and acute leukemia (9% versus 5%, p=0.037), and less with lymphoma (28% versus 44%, p<0.001).

The Kaplan-Meier estimator for survival is shown in Figure 1, with a day 100 survival of 61%. Of all hospitalized patients, 30% (n=66) were admitted to the ICU, and 20% (n=44) received invasive ventilation. ICU admission was not done or was shortened in favor of palliative care in 24% (n=54) of patients.

Conclusion

Our results indicate that hematology patients are at an increased risk of being hospitalized for severe COVID19, especially those with acute leukemia or multiple myeloma, and have a high mortality, occurring mostly within 6 weeks of diagnosis.

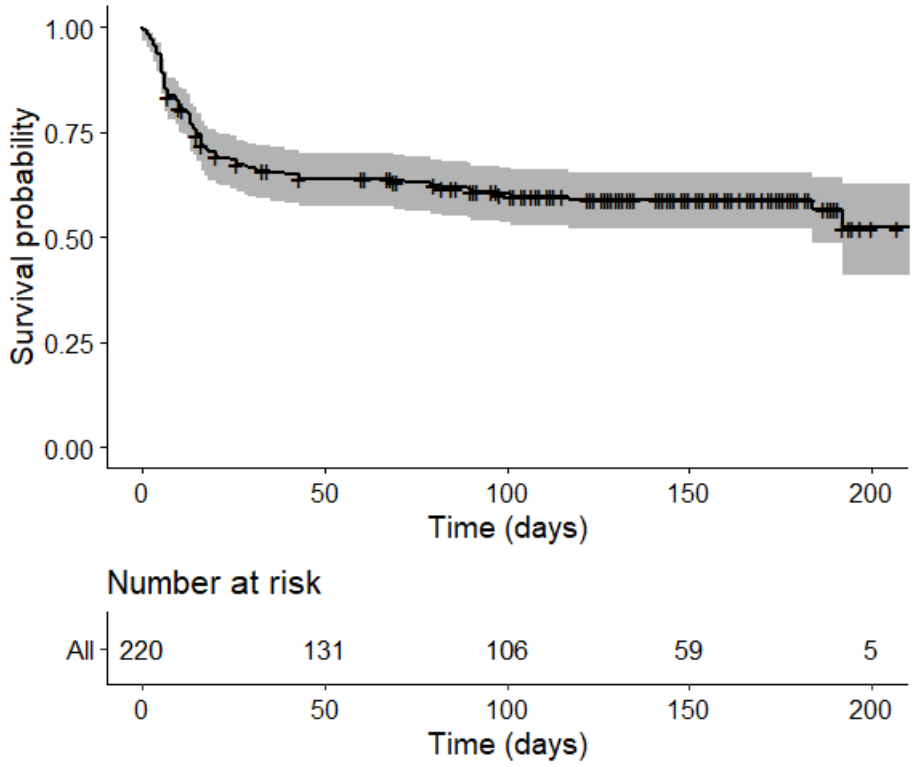

Figure 1. Kaplan-Meier estimator for survival in hematology patients hospitalized for COVID19