P1605 OUTCOME OF SARS-COV-2 INFECTION IN HAEMATOLOGICAL CANCER PATIENTS (PTS) IN TWO DIFFERENT PANDEMIC PHASES AT A SINGLE CENTRE

**Topic:** 30. Infections in hematology (incl. supportive care/therapy)

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**Background:**

The outcome of haematological cancer pts with SARS-CoV-2 infection has been shown to be dismal since the beginning of the COVID-19 pandemic. Risk factors for serious infection may include recent antineoplastic treatment, type of treatment and active disease, besides age and comorbidities. The onset of vaccination reduced the risk of severe COVID-19 in the general population, but it is unclear whether the same is true in immunocompromised pts. The impact of different viral variants on outcomes is also a matter of debate.

**Aims:**

To evaluate and compare the outcomes of COVID-19 measured by the severity of infection and short-term mortality, in pts with haematological cancer during two different pandemic phases.

**Methods:**

Retrospective data was obtained from clinical charts of pts followed at a tertiary cancer centre and diagnosed with SARS-CoV-2 infection by RT-PCR in December 2020/January 2021 (series A) and December 2021/January 2022 (series B). Clinical characteristics collected were age, gender, tumour type, phase of neoplastic disease, comorbidities, concurrent antineoplastic treatment (grouped as shown on Table 1), need for suspension of active treatment, severity of infection and death due to COVID-19 within the first 30 days of infection. We used multivariable logistic regression analysis (MVA) to compare COVID-19 severity and 30-day mortality between the two periods, controlling for concurrent active antineoplastic treatment and number of comorbidities, which differed between the groups.

**Results:** We identified 127 pts infected with SARS-CoV-2 in December 2020/January 2021, and 136 in December 2021/January 2022. Patients’ characteristics are shown in Table 1. The two groups were comparable except for a higher incidence of multiple comorbidities in series A (33% vs 25% in series B) and an increased proportion of cases under active treatment in series B (61% vs 39% in series A). The majority of pts had at least one comorbidity with known impact for severe COVID-19, most frequently chronic cardiopathy. Low (22%) and high grade (26%) lymphoma were the predominant diagnoses in series A and B respectively. The most common antineoplastic treatments were immunotherapy/immunochemotherapy. 88% pts in series B were vaccinated against SARS-CoV-2, 42% with a 3-dose scheme. As a consequence of viral infection 48% pts in series B required suspension of active antineoplastic treatment, as opposed to 43% in series A. COVID-19 was classified as asymptomatic, mild, severe (requiring hospitalization) or critic (requiring ICU). Severe/critic infection was most frequent in series A (32% vs 15%). 74% of cases in the odds for severe/critic infection in series B compared to A (OR 0.26; CI95% 0.13-0.51; p<0.001), when controlling for number of comorbidities and concurrent antineoplastic treatment. COVID-19-related 30-day mortality was reduced from 9% to 4% between series A and B. However, this difference was not significant on MVA (OR 0.36; CI95% 0.10-1.09; p=0.084).

**Image:**

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In this single-centre analysis of a heterogeneous haematologic cancer population infected in two different pandemic phases, the severity of COVID-19 was significantly reduced in the most recent period. Whether this reduction is due to vaccination, a dominant less harmful viral variant or differences in supportive care is unknown. Also, the population analysed may not be representative of all haematological cancer pts, being subject to referral bias. Larger, homogeneous series with longer follow-up are needed to better understand the factors that lead to such different outcomes.

Table 1 – Patients’ characteristics and outcome

|                         | Series A December 2020-January 2021 (n = 127) | Series B December 2021-January 2022 (n = 130) |
|-------------------------|-----------------------------------------------|-----------------------------------------------|
| Sex (masculine)         | 74 (58%)                                      | 75 (56%)                                      |
| Age (years) – median (min-max) | 59 (17-92)                                   | 59 (18-94)                                   |
| Comorbidities (number)  |                                               |                                               |
| 0                       | 85 (67%)                                      | 102 (75%)                                     |
| > 2                     | 42 (33%)                                      | 34 (25%)                                      |
| Haematological cancer diagnosis |                                             |                                               |
| Low grade NHL / High grade NHL | 28 (22%) / 19 (15%)                           | 29 (21%) / 36 (26%)                           |
| Acute Leukaemia         | 17 (13%)                                      | 14 (10%)                                      |
| Myeloproliferative neoplasms | 14 (11%)                                      | 18 (13%)                                      |
| Hodgkin Lymphoma        | 19 (15%)                                      | 10 (7%)                                       |
| Chronic lymphocytic leukaemia | 11 (9%)                                      | 14 (10%)                                      |
| Plasma cell tumours     | 15 (12%)                                      | 7 (5%)                                        |
| Myelodysplastic syndromes | 1 (1%)                                        | 4 (3%)                                        |
| Other                   | 9 (7%)                                        | 4 (3%)                                        |
| Phase of neoplastic disease |                                               |                                               |
| Onset                   | 6 (5%)                                        | 5 (4%)                                        |
| Remission/Stable        | 110 (87%)                                     | 117 (86%)                                     |
| Relapse/Progression     | 11 (9%)                                       | 14 (10%)                                      |
| Active neoplastic treatment |                                               |                                               |
| No treatment or supportive care | 85 (67%)                                      | 61 (45%)                                      |
| Under treatment         | 42 (33%)                                      | 75 (55%)                                      |
| Immunomodulatory* / Monoclonal antibodies | 17 (13%) / 2 (2%)                           | 27 (20%) / 12 (9%)                           |
| Low-intensity chemotherapy* | 5 (4%)                                        | 3 (4%)                                        |
| Targeted therapies*     | 14 (11%)                                      | 26 (19%)                                      |
| IMIDs                   | 10 (8%)                                       | 6 (4%)                                        |
| Hyromethylating agents  | 1 (1%)                                        | 2 (2%)                                        |
| Active treatment suspension | 21 (17%)                                      | 40 (30%)                                      |
| Severity of COVID-19    |                                               |                                               |
| Asymptomatic/Mild       | 88 (68%)                                      | 115 (85%)                                     |
| Severe/Critical         | 41 (32%)                                      | 21 (15%)                                      |
| Directed treatment for COVID-19 |                                               |                                               |
| Corticosteroids         | 28 (22%)                                      | 12 (9%)                                       |
| Remdesivir             | 5 (4%)                                        | 1 (1%)                                        |
| Convalescent plasma     | 1 (1%)                                        | 0                                             |
| Vaccination             | 0                                             | 119 (89%)                                     |

Summary/Conclusion:

In this single-centre analysis of a heterogeneous haematologic cancer population infected in two different pandemic phases, the severity of COVID-19 was significantly reduced in the most recent period. Whether this reduction is due to vaccination, a dominant less harmful viral variant or differences in supportive care is unknown. Also, the population analysed may not be representative of all haematological cancer pts, being subject to referral bias. Larger, homogeneous series with longer follow-up are needed to better understand the factors that lead to such different outcomes.

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