**P1609 VERY LOW MORTALITY IN DOUBLE VACCINATED IMMUNOCOMPROMISED HAEMATOLOGY PATIENTS INFECTED WITH SARS-COV-2.**

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

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**Background:** Patients with immunocompromising haematological neoplasms (HN) are reported to be at high risk of death from SARS-CoV-2 (COVID19). However, many studies were conducted prior to widespread immunisation and availability of effective antiviral strategies. Here, we report outcomes of patients with HN presenting with COVID19 infection in the setting of high vaccination rates and effective COVID19 therapies, in a population that had low prior exposure to COVID19 due to national border controls and strict isolation measures.

**Aims:** To ascertain the rate of COVID19 mortality and severe disease in a cohort of patients with HN, and identify factors associated with severity, including, immunisation status, use of antiviral therapies and likely viral strain.

**Methods:** An observational study was conducted at an Australian tertiary hospital network servicing a population of 1.3 million. Adults with HN who tested positive for COVID19 were included. Patient and disease characteristics, vaccination status, therapy, hospital admission data and outcomes were extracted from hospital records. Associations with disease severity were examined using Chi-squared with p-values adjusted for multiple testing by Benjamini-Hochberg procedure.

**Results:** Between January 2020- February 2022, 75 patients with HN and COVID19 infection were identified. Median age 70 y (range 18-91) with 60% male. Underlying HN included: indolent lymphoma 26, myeloma 25, aggressive lymphoma 7, myelodysplastic syndrome 6, myeloproliferative neoplasm 4, chronic myeloid leukaemia 4 and acute myeloid leukaemia 3. Grade 3+ neutropenia <3 months prior to infection was identified in 15, anti-CD20 antibody therapy < 6 months in 14 and AuSCT <2 years in 4. At COVID19 diagnosis, 10 were unvaccinated for COVID19, 3 had received a single dose, 43 had received 2 doses and 19 had received 3 doses. 54 patients were diagnosed with COVID19 when Omicron strain was the dominant strain circulating. 21 tested positive to COVID19 when the Delta strain was dominant. Other COVID19 strains were very unlikely to be present given the low prevalence in Victoria during the period of study. 37 patients were admitted to hospital with a median length of stay of 8 days (range 3 -33). Of these patients, 4 were admitted to ICU with 2 patients requiring intubation. Another patient received non-invasive ventilation in a high dependency ward. The median length of stay in ICU was 5 days (range 2-11). Therapies used in hospitalised patients were administered according to institutional protocol and included sotrovimab, dexamethasone, remdesivir and baricitinib. 4 patients died with 3 (4%) of these directly attributed to COVID19 infection and one due to myeloma. Of 4 patients admitted to ICU, three were unvaccinated. Factors associated with hospitalisation included age ≥70 (p = 0.002), receiving <2 vaccinations against COVID19 (p = 0.012) and likely non-Omicron strain (p = 0.012). The underlying haematological condition, prior anti-CD20 therapy, presence of recent neutropenia or use of Sotrovimab was not found to impact on the likelihood of severe disease or hospital admission.

**Image:**
Summary/Conclusion: Within our cohort of patients with haematological cancer diagnosed with COVID19 infection, the role of immunisations and presence of the Omicron strain within the community has resulted in a mortality rate of 4% which is lower than the rates observed in previous studies. Hospitalisation occurred in 48% of the patients, with risk factors of older age, being non- or partially vaccinated and likely non-Omicron strain of COVID19 identified.

|               | Admitted | Non-admitted | Relative Risk | p      |
|---------------|----------|--------------|---------------|--------|
| Age>70       | 27       | 12           | 5.9 [2.2-15.9] | 0.002  |
| Age20       | 10       | 26           |               |        |
| Vaccinated2  | 20       | 36           | 0.3 [0.1-0.9] | 0.012  |
| Vaccinated1/2| 13       | 2            |               |        |
| Neutropenia Y| 9        | 0            |               | 0.48   |
| Neutropenia N| 28       | 0            |               |        |
| Anti-CD20 Y  | 5        | 9            |               | 0.452  |
| Anti-CD20 N  | 22       | 29           |               |        |
| Sotrovimab Y | 15       | 19           |               | 0.48   |
| Sotrovimab N | 22       | 19           |               |        |
| Omicron Y    | 21       | 53           | 0.3 [0.1-0.9] | 0.012  |
| Omicron N    | 16       | 5            |               |        |
| Myeloid      | 9        | 8            |               | 0.559  |
| Lymphoid     | 14       | 19           |               |        |
| Myeloma      | 14       | 11           |               |        |

Associations with disease severity were examined using chi-squared with p-values adjusted for multiple testing by Benjamin-Hochberg procedure.