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P1610 IMPACT OF COVID-19 ON PATIENTS TREATED WITH AUTOLOGOUS HEMATOPOIETIC STEM CELL TRANSPLANTATION - A RETROSPECTIVE COHORT STUDY

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

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Background: Early studies of COVID-19 reported high mortality rates in patients with malignancy and who were immunocompromised. The immunosuppression related to autologous hematopoietic stem cell transplantation (ASCT) together with the risk of contracting severe SARS-CoV-2 lead to modifications in the therapy recommendations and, in many cases, to postponed treatment.

Aims: To describe how Coronavirus Disease 2019 (COVID-19) affect patients with hematological malignancies treated with ASCT.

Methods: This retrospective observational cohort study includes all patients with hematological malignancies treated with ASCT in Sweden from 1 January 2020 until 31 December 2020. Patients who subsequently tested positive for SARS-CoV-2 until 31 March 2021 were analyzed for morbidity, mortality, need for supportive care and risk factors involved in COVID-19.

Results: The study identified 442 patients who underwent ASCT in Sweden in 2020, among whom 20 (4.5%) subsequently contracted COVID-19. The overall mortality was 15% and the COVID-19 related mortality 10%. The absolute risk of COVID-19 related mortality was 0.45% among patients treated with ASCT. Six (35%) patients were hospitalized, among which four (24%) needed supplementary oxygen and two (12%) intensive care.

Image:

TABLE 1. CHARACTERISTICS OF THE STUDY COHORT

	Ambulatory (*n*:11)	Hospitalized (*n*: 3)	Dead (*n*: 3)
Age (median)	60.1 (45.9-68.1)	57.0 (40.1-60.3)	65.3 (63.9-70.2)
Hematological disease			
Myeloma	7 (70%)	2 (20%)	1 (10%)
Plasma cell leukemia	1 (100%)	-	-
B-cell lymphoma	2 (50%)	1 (25%)	1 (25%)
Hodgkin lymphoma	1 (100%)	-	-
Anaplastic T-cell lymphoma	-	-	1 (100%)
Disease status at conditioning			
CR – complete remission	5 (71%)	2 (29%)	-
PR – partial response	6 (67%)	1 (11%)	2 (22%)
SD – stable disease	-	-	1 (100%)
PD – progressive disease	-	-	-
Comorbidities[†]			
Diabetes	1 (50%)	-	1 (50%)
Hypertension	2 (50%)	-	2 (50%)
Chronic lung disease	-	-	1 (100%)
Chronic kidney disease	-	1 (100%)	-
Organ transplantation (kidney)	-	1 (100%)	-
Obesity	1 (33%)	2 (67%)	-
No of prior lines of treatment			
1	9 (75%)	1 (8%)	2 (17%)
2	-	2 (100%)	-
5	2 (67%)	-	1 (33%)
Prior treatment (last 6 months)			
Tandem ASCT	2 (67%)	1 (33%)	-
Chemotherapy	3 (43%)	2 (29%)	2 (29%)
Proteasome inhibitors	8 (89%)	1 (11%)	-
IMiDs	6 (86%)	1 (14%)	-
CD20 monoclonal antibodies	2 (50%)	1 (25%)	1 (25%)
SLAMF7 monoclonal antibodies	-	-	1 (100%)
Steroids	10 (67%)	2 (13%)	3 (20%)
Radiation	1 (50%)	-	1 (50%)
Immunotherapy	3 (75%)	-	1 (25%)
Brentuximab-vedotin	-	-	1 (100%)
Conditioning			
Melphalan	8 (73%)	2 (18%)	1 (9%)
BEAM	3 (60%)	1 (20%)	1 (20%)
BEAC	-	-	1 (100%)
Time of positive PCR, after ASCT (median, months)	5.6 (1.9-11.6)	8.6 (3.7-11.3)	8.7 (0.6-9.5)
Treatment given[‡]			
Dexametason	-	-	2 (100%)
Convalescent plasma	-	1 (50%)	1 (50%)
Remdisivir	-	1 (100%)	-

The table shows the characteristics of all patients treated with hematopoietic autologous stem cell transplantation for hematological malignancy in Sweden in 2020 who subsequently tested positive for SARS-CoV-2.
Clinical data, except for diagnosis and mortality, is missing for three patients. Percentages are shown for each row.

[†]Non of the patients in the cohort had a history of cardiovascular disease, stroke, chronic liver disease, neuromuscular disease, other active cancer, allogenic stem cell transplantation or smoking.

[‡]No patients were given IL-6 pathway inhibitors, hydroxychloroquine or baricinitinib.

Abbreviations: IMiDs (Immunomodulatory imide drugs), BEAM (Carmustine, etoposide, cytarabine and melphalan), BEAC (Carmustine, etoposide, cytarabine, and cyclophosphamide).

Summary/Conclusion: ASCT patients have a higher risk of severe outcome of COVID-19 compared to the general population. The risk of death, need for hospital care, oxygen and intensive care was lower in this study compared with most previous studies, possibly because of less missing asymptomatic patients. The risk of contracting SARS-CoV-2 was comparable with the general population. This study support performing ASCT for treatment of hematological malignancies despite the COVID-19 pandemic.