

Keyword : Bacteremia, Blood Culture, Febrile Neutropenia, Hematologic Malignancy

Supplementary Data

Table 1.0 Baseline characteristic of sample (n=85)

	Number	%
Female:Male ratio	51/34 (1.5)	
Mean of age	47.12±16.95	
Hematologic malignancy	55	64.7
Positive blood culture	35	41.2
Negative Gram	13	15.6
Bacillus	1	1.2
Enterobacter	2	2.4
Escherichia coli	5	6
Pseudomonas	5	6
Klasiella	5	6
Positive Gram	14	17.8
Streptococcus	13	15.6
Coagulase Negative	1	1.2
Staphylococcus		
Candida	3	3.6

Table 2.0 A comparison of patients with hematologic and solid organ malignancy who had febrile neutropenia

	Hematologic malignancy number (%)	Solid organ malignancy number (%)	P Value
Number	30 (35.29)	55 (64.7)	
Mean of age (years)	54.34±15.11	53.43±17.03	
Female	22 (73.3)	29 (47.3)	0.7
Positive blood culture	23 (41.8%)	13 (43.3%)	0.54
Hematology Parameter			
Absolute Neutrophil Count (10 ⁹ /μL)	0.17±0.15	0.15±0.13	0.64
WBC (10 ⁹ /μL)	0.9 (0.17-74.2)	0.63 (0.58-1)	0.39
Neutrophil (%)	16.8 (0.21-67.93)	16.23 (1.72-60.08)	0.81
Lymphocyte (%)	61.21 (6.48-96.96)	57.43 (24.38-96.55)	0.50
Monocyte (%)	7.76 (0.28-68.74)	15.92 (0.17-42.91)	0.26
Basophile (%)	1.4 (0.50-11)	1.52 (0.6-4)	0.54
Eosinophile (%)	0.5 (0.0-49.42)	0.71 (0.0-14.37)	0.10
LDH	441.5 (197-2236)	366 (193-588)	0.31
PLT (10 ⁹ /μL) [†]	21.35 (1.41-348.39)	89.41 (3.31-523)	0.03
AST (U/L)	13.2 (2.7-472.6)	24.7 (5.6-83.2)	0.18
ALT (U/L)	18.1 (5.9-243.5)	18.35 (4.7-74.8)	0.82
Creatine serum (mg/dL)	0.75 (0.39-1.94)	0.79 (0.31-3.97)	0.46
Urid acid (mg/dL)	5.45 (3.2-8.3)	4.9 (1.6-8.4)	0.50
Kalium (mmol/L)	3.73 (2.23-4.51)	3.78 (2.4-9)	0.38

All parameters are expressed as mean standard deviation for normally distributed data while not normally presented median (minimum to maximum), unless otherwise stated. Significance levels was set at P<0.05. †Significant different between the two groups. ALT, Alanine transaminase; AST, Aspartate aminotransferase; LDH: Lactate dehydrogenase; PLT, Platelet.

and nasopharyngeal swabs. The indications for diagnostic PCR for COVID-19 were: fever with signs of damage to the lung tissue (cough, shortness of breath, decreased oxygenation, etc.) or fever, unexplained by other reasons, loss of taste and smell. Diagnosis of COVID-associated lung disease was carried out using CT-scans. Outcome was determined as all-cause mortality.

Results : During the follow-up period, there were totally 66 hematological patients diagnosed with COVID-19 infection. The ratio of men (34) and women (32) was 1:1. The patients' age was from 21 to 88 years. Median age was 62.4 years. The most frequent range in which, along with hematological diseases, COVID-19 infection was confirmed is the age category of patients > 60 years. Also, the category of patients over the age of 60 had the highest case fatality rate. The courses of specific therapy with the use of various types of drugs, depending on the nosology of the underlying disease were prescribed accordingly - 42 (63.6%) patients received: proteasome inhibitors (combinations with bortezomib and/or lenalidomide) in patients with MM; courses with cytarabine; monoclonal antibodies (rituximab) in patients with CLL and NHL, hypomethylating agents (decitabine, azacytidine) in patients with MDS, and GCS. As a result of the study, aAge>60 years (HR 1.8; 95% CI 1.01-3.28) and the stage of progression of hematological disease (HR 2.8; CI 95% 1.9-4.0) were statistically significant factors of fatal risk in patients with hematological malignancies. Chronic kidney disease (CKD) at stages 4-5 was a statistically significant factor of a fatal outcome in patients with hematological disease and COVID-19 (P <0.05, Fisher's exact test 0.01). The presence of cardiovascular pathology, diabetes mellitus and other cancers did not affect the outcomes.

Conclusion : 1) In hematological patients COVID-19 infection is associated with a severe course and high mortality (48%).
 2) The most common hematological diseases in our study, which was associated with COVID-19 infection was multiple myeloma (37.8% of patients).
 3) The highest case fatality rate is observed in patients with multiple myeloma and acute leukemia (21% and 12%, respectively).
 4) Risk factors for mortality of COVID-19 infection in patients with hematological malignancies are age> 60 (HR 1.8; 95% CI 1.01-3.28) and the stage of progression to hematological malignancies (HR 2.8; 95% CI ; 1.9-4.0).
 5) Mortality in the groups of patients receiving PCT in the period from 1 to 3 months before the onset of COVID-19 infection and in the group of patients without PCT did not differ significantly.

Keyword : COVID-19, Risk Factors, Hematological Neoplasms

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COVID-19 infection in hematological patients: Results of a prospective cohort study

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Background : There is very little systematic data on the course and outcomes of COVID-19 infection in patients with hematological neoplasms. According to the existing data, cancer patients infected with SARS-CoV-19 have severe clinical manifestations and often poor outcomes comparing to general population. Objective of this prospective cohort study was to assess the course of COVID-19 infection in patients with hematological neoplasms as well as to estimate the predictors of adverse outcomes including fatal outcome.

Method : A prospective cohort study was carried out, including 66 patients with hematological neoplasms and a confirmed COVID-19 infection, who were treated from March to September 2020 at the Minsk Scientific and Practical Center for Surgery, Transplantology and Hematology. Verification of the infection, caused by SARS-CoV-2 was performed by real-time PCR of the oropharyngeal

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Vitamins: A cure for oral mucositis induced by cancer chemo/ radiotherapy – A meta-analysis of RCTs

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