

Original Articles

Pathogen Distribution, Antimicrobial Resistance, and Mortality in Febrile Neutropenia among Adults with Hematological Malignancies: A Single-Center Cohort Study

Rukiyye Bulut¹, İbrahim Erayman¹, Ceren Eryılmaz Yaman¹, Bahar Kandemir¹, Pınar Belviranlı Keskin², Esma Kepenek Kurt¹ and Özcan Çeneli³.

¹ Necmettin Erbakan University Faculty of Medicine, Department of Infectious Diseases and Clinical Microbiology, Konya, Türkiye.

² Konya City Hospital, Department of Infectious Diseases and Clinical Microbiology, Konya, Türkiye.

³ Necmettin Erbakan University Faculty of Medicine, Department of Hematology, Konya, Türkiye.

Supplementary Files

Table S1. Comparison of episodes with and without documented neutropenia duration

Variable	Missing duration (n=67)	Available duration (n=159)	p
Age (years), median (Q1-Q3)	63 (46-71)	61 (46-69)	0.212 ^a
Sex, n (%)			0.050 ^b
Female	25 (37.3)	82 (51.6)	
Male	42 (62.7)	77 (48.4)	
Acute leukemia/MDS group, n (%)			0.452 ^b
No	28 (41.8)	58 (36.5)	
Yes	39 (58.2)	101 (63.5)	
Infection classification, n (%)			0.055 ^b
Clinically documented infection	19 (28.4)	47 (29.6)	
Microbiologically documented infection	11 (16.4)	48 (30.2)	
Fever of unknown origin	37 (55.2)	64 (40.3)	
Clinically suspected IPA, n (%)			0.371 ^b
No	60 (89.6)	148 (93.1)	
Yes	7 (10.4)	11 (6.9)	
Fungal infection*, n (%)			0.373 ^b
No	59 (88.1)	146 (91.8)	
Yes	8 (11.9)	13 (8.2)	

This table presents a descriptive comparison of classical FN episodes by availability of neutropenia-duration data. ^a Mann-Whitney U test. ^b Pearson chi-square test. IPA, invasive pulmonary aspergillosis. *Fungal infection included clinically suspected invasive pulmonary aspergillosis and candidemia identified during the FN episode.

Table S2. Univariable logistic regression analysis of factors associated with 28-day infection-related mortality in the acute leukemia/MDS group (n=81)

Variable	OR	95% CI	p
Female sex (ref: male)	2.398	0.574-10.000	0.230
Age (years)	1.017	0.977-1.059	0.409
Absolute neutrophil count ($\times 10^3/\mu\text{L}$)	0.438	0.014-13.454	0.637
Absolute lymphocyte count ($\times 10^3/\mu\text{L}$)	0.436	0.090-2.121	0.304
Platelet count ($\times 10^3/\mu\text{L}$)	0.978	0.945-1.013	0.209
CRP (mg/L)	1.000	0.994-1.006	0.886
PCT (ng/mL)	1.005	0.993-1.016	0.423
Duration of neutropenia (days)	1.000	0.970-1.030	0.983
Clinically suspected IPA (ref: no)	1.204	0.130-11.181	0.870

Analysis was restricted to patients in the acute leukemia/MDS group (AML, ALL, or MDS). Given the limited number of infection-related deaths (n=10), a multivariable model was not constructed. IPA, invasive pulmonary aspergillosis. CRP, C-reactive protein; PCT, procalcitonin.

Table S3. Univariable and multivariable logistic regression analysis of factors associated with 28-day infection-related mortality in the full cohort (n=169)

Variable	Univariable OR (95% CI)	p	Adjusted OR (95% CI)	p
Age (years)	1.013 (0.982-1.046)	0.411	–	–
Female sex (ref: male)	2.079 (0.764-5.657)	0.152	1.800 (0.646-5.015)	0.261
Absolute neutrophil count ($\times 10^3/\mu\text{L}$)	1.002 (0.967-1.038)	0.921	–	–
Absolute lymphocyte count ($\times 10^3/\mu\text{L}$)	0.981 (0.902-1.066)	0.647	–	–
Platelet count ($\times 10^3/\mu\text{L}$)	0.985 (0.970-1.001)	0.067	0.987 (0.971-1.003)	0.103
CRP (mg/L)	0.999 (0.994-1.003)	0.600	–	–
PCT (ng/mL)	1.002 (0.991-1.013)	0.711	–	–
Duration of neutropenia (days)	1.005 (0.980-1.031)	0.677	–	–
Clinically suspected IPA (ref: no)	3.575 (0.856-14.933)	0.081	–	–
Acute leukemia/MDS group (ref: other hematological malignancies)	1.728 (0.617-4.846)	0.298	1.218 (0.415-3.573)	0.720

The full cohort included the 13 patients excluded from the primary cohort because their index episode did not meet the conventional FN definition. Hosmer-Lemeshow $\chi^2=7.93$, df=8, p=0.440; Nagelkerke $R^2=0.080$. The multivariable model used the same covariate specification as the primary analysis and included female sex, platelet count, and acute leukemia/MDS group. The acute leukemia/MDS group comprised patients with AML, ALL, and MDS, with other hematological malignancies serving as the reference category. CRP, C-reactive protein; PCT, procalcitonin; IPA, invasive pulmonary aspergillosis.