

Clinical Frailty Scale as a predictor of mortality of pulmonary infections in patients with

Hematological Malignancies



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Background

Due to the poor outcomes reported in older patients with hematological malignancies (HM) and pulmonary infections, there is a need to identify patients at high risk of mortality. Objective: This study aims to find the association between frailty and mortality in patients above 65 years of age with HM with pulmonary infections.

Methods

A cross-sectional, retrospective study was conducted on the clinical data of 64 HM older patients with pulmonary infection hospitalized in a tertiary university hospital in Bucaramanga, Colombia, between January 2015 and December 2020. Patients were assessed using Clinical Frailty Scale (CFS) and were divided into three groups: CFS 1–4 fit; CFS 5–6 frail and CSF 7–9 severely frail. The association between frailty and in-hospital mortality was the primary outcome. All statistical analyses were performed using Stata/IC 14.0.

Results

- 64 patients were included, 48.4% were women, and the mean age was 75.4 ± 6.85 years.
- The number of participants classified as fit, frail, and severely frail was 21 (32.8%), 22 (34.3%), and 21 (32.8%), respectively.
- A total of 45 patients (70.3%) died during hospitalization.

Variable	Total (n=64; 100%)	Survivor (n=19; 29.69%)	Non-survivor (n=45; 70.31%)	p value
Demographics and comorbidities				
Male gender, n (%)	33 (51.56%)	8 (42.11%)	25 (55.56%)	0.325
Age (years), median (IQR)	75 (69-80)	73 (68-78)	76 (70-81)	0.232
Body mass index, median (IQR) (n=192)	21 (19.9-23.1)	21 (19.9-25)	21 (19-23)	0.855
Charlson Comorbidity index, mean ± SD	6.56 (2.29)	6.58 (2.01)	6.56 (2.42)	0.970
Heart failure, n (%)	19 (29.69%)	5 (26.32%)	14 (31.11%)	0.701
Chronic obstructive pulmonary disease, n (%)	17 (26.56%)	6 (31.58%)	11 (24.44%)	0.555
Chronic kidney disease, n (%)	11 (17.19%)	3 (15.79%)	8 (17.78%)	1
Diabetes mellitus, n (%)	10 (15.63%)	2 (10.53%)	8 (17.78%)	0.710
Underlying disease, n (%)				
Acute lymphoblastic leukaemia	3 (4.69%)	2 (10.53%)	1 (2.22%)	0.208
Acute myeloid leukaemia	14 (21.88%)	3 (15.79%)	11 (24.44%)	0.526
Chronic lymphocytic leukemia	10 (15.63%)	7 (36.84%)	3 (6.67%)	0.005
Chronic myeloid leukemia	6 (9.38%)	2 (10.53%)	4 (8.89%)	1
Non-Hodgkin lymphoma	12 (18.75%)	3 (15.79%)	9 (20%)	1
Hodgkin Lymphoma	2 (3.13%)	1 (5.26%)	1 (2.22%)	0.509
Multiple myeloma	8 (12.5%)	1 (5.26%)	7 (15.56%)	0.418
Myelodysplastic syndrome	8 (12.5%)	0	8 (17.78%)	0.093
Etiology of pulmonary infection, n (%)				
Bacterial infection	22 (34.38%)	5 (26.32%)	17 (37.78%)	0.378
Viral	6 (9.38%)	2 (10.53%)	4 (8.89%)	1
Fungal	7 (10.94%)	1 (5.26%)	6 (13.33%)	0.664
Unknown agent	28 (43.75%)	11 (57.89%)	17 (37.78%)	0.138
CFS category, n (%)				
CFS 1-4 (Fit)	21 (32.81%)	16 (84.21%)	5 (11.11%)	0.000
CFS 5-6 (Frail)	22 (34.38%)	2 (10.53%)	20 (44.44%)	0.010
CFS 7-9 (Severely frail)	21 (32.81%)	1 (5.26%)	20 (44.44%)	0.003

Table 1. Baseline characteristics of study participants.

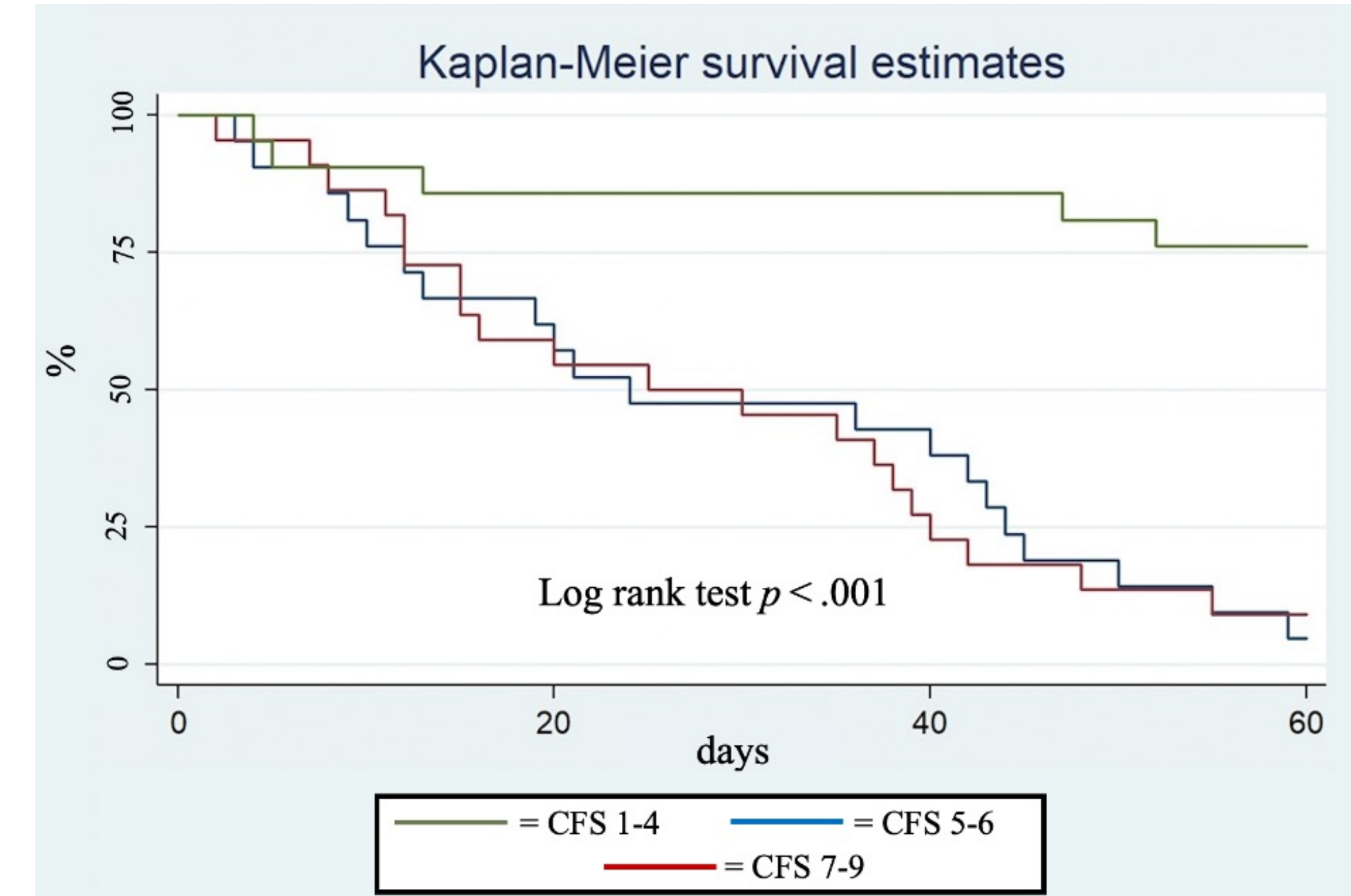


Image 1. Kaplan-Meier survival estimate for mortality

Conclusions

- The Clinical Frailty Scale (CFS) could be used as a potentially useful tool in predicting mortality of pulmonary infections in elderly patients with HM.
- These results could suggest that the use of this score extends beyond evaluating frailty and could predict adverse outcomes and help decision-making in complex clinical scenarios.

