

00567 Risk factors for death among patients with haematologic malignancies diagnosed with invasive aspergillosis: a retrospective observational cohort study

Roni Bitterman*¹, Nasreen Hassoun Kheir¹, Oryan Henig², Anat Stern¹, Dor Hermann¹, Tzila Zuckerman¹, Yishai Ofran¹, Ilana Oren¹, Mical Paul¹

¹ Rambam Healthcare Campus, Haifa, Israel, ² University of Michigan, Ann Arbor, United States

Background: Invasive aspergillosis (IA) remains an important cause of death among patients with hematologic malignancies (HM). Data are lacking on contemporary mortality rates and the risk factors for mortality. We aimed to assess the risk factors for death among patients with HM diagnosed with IA.

Materials/methods: We included all patients undergoing intensive chemotherapy for hematologic malignancies or following hematopoietic stem cell transplantation (HSCT) that were diagnosed with IA, using consensus definition for infection, between 2014-2017. The primary outcome was 90-day all-cause mortality. We collected data regarding demographic information, background diseases and functional capacity, details about HM, status post HSCT and graft versus host disease, specific risk factors for IA and its clinical manifestation (including radiographic findings), diagnostic certainty and the treatment. Risk factors for death were analyzed using univariate analysis. Factors associated significantly with mortality on univariate analysis ($p < 0.05$), were entered into a multivariate analysis.

Results: Our study included 207 patients with IA. Age ranged between 19-90 years and averaged 57 years. The most common HM was acute myeloid leukemia, occurring in 112/207 (54.6%) of the study population. Sixty-seven patients (32.3%) died within 90 days from the diagnosis of IA. On multivariate analysis, independent risk factors for death within 90 days included use of corticosteroids before IA diagnosis, dyspnea as part of the clinical presentation of IA, acute renal failure, new mechanical ventilation and liver disease. The model was highly predictive of mortality with an area under the receiver operating characteristics curve of 0.841 (95% CI = 0.781-0.9, $P < 0.001$). The type of HM, its status, and status post HSCT were not significantly associated with mortality. Restricting the analysis to patients with proven/probable IA there were 76 patients with a 90 day mortality rate of 31.6%. Risk factors for mortality in this subgroup were similar to the entire cohort, though none reached statistical significance.

Conclusions: Identification of the risk factors for mortality following IA might help us in the early recognition of high-risk patients. These patients might benefit from optimal antifungal therapy as soon as possible leading to improved survival rates.

Table: multivariate analysis of risk factors for 90 day mortality among patients with hematologic malignancies diagnosed with invasive aspergillosis

	OR (95% CI)	P value
Steroid use	2.84 (1.17-6.85)	0.02
Dyspnea	2.94 (1.35-6.37)	0.006
Acute renal failure	4.24 (1.5-11.97)	0.006
Mechanical ventilation	10.53 (2.61-42.4)	<0.001
Liver disease	8.34 (2.29-30.32)	<0.001

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