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CURRENT CAUSES OF DEATH FOR PATIENTS WITH INVASIVE ASPERGILLOSIS

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Objective: We sought to identify the causes of death for patients with invasive aspergilosis (IA). We also compare the timing and risk factors associated with IA-related and IA-unrelated mortality.

Methods: Multicenter cohort study of hospitalized adults with IA in three referral hospitals between 2008 and 2011. We only included cases of proven or probable IA according to the EORTC/MSG definitions. The events preceding death were independently reviewed by 3 members of a 6-member review panel for all deaths within 14 days (early mortality) and 90 days (overall mortality) of diagnosis. The causes of death and whether IA was the cause or had a major, minor, or not apparent role in the death were determined using a consensus. Death was defined as IA-related if IA was the cause of death or played a major role in the cause of death.

Results: We identified 165 patients with IA; 127 cases (77%) had criteria of probable IA and the remaining 38 (23%) had proven IA. Positive results included: culture (125 cases), galactommanan (98), and hystology (34). Early mortality occurred in 46 pts (28%) and overall mortality in 100 (61%). The most frequent causes of death are detailed in the table. Mortality was judged to be IA-related in 62% of cases. Of the 46 deaths during the firsts 14 days, 38 (83%) were evaluated as IA-related. Of the 54 deaths occurring between day 15 and day 90, 24 (44%) were judged to be IA-related (p<.0001). Factors independently associated with IA-related mortality were age (OR 2.34; CI 95% 1.04-5.29) and chronic liver disease (OR 3.13; CI 95% 1.02-9.56). In contrast, treatment with voriconazole was associated with lower IA-related mortality (OR 0.32; CI95% 0.14-0.75). Independent factors associated to IA-unrelated mortality were not indentified.

Conclusions: We found differences in the causes of early and overall mortality for patients with IA. IA-related mortality is high, especially in patients who died within the first 14 days (83%). Strategies to improve the antifungal management in this period are needed. Researchers interested in evaluating therapies to improve the outcome of IA should differentiate between IA-related and IA-unrelated mortality.

Cause of death	Early mortality (14 days) N=46 (%)	Overall mortality (30 days) N=100 (%)	p
Multisystem organ failure	28 (61)	40 (40)	.03
Respiratory failure	12 (26)	42 (42)	.09
Septic shock caused by bacterial infection	5 (11)	15 (15)	.68
Baseline illness	5 (11)	13 (13)	.93
Pulmonary hemorrhage	3 (6.5)	4 (4)	.68
Neurological conditions	3 (6.5)	4 (4)	.68
Other	4 (9)	12 (12)	.22