Poster Presentations

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The epidemiology, clinical manifestations and outcomes of cerebral mucormycosis: A systematic review
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Objective: Mucormycosis is a devastating infection caused by Mucorales order ubiquitously existing in the environment. Cerebral mucormycosis, the mortally manifested type of brain infection, is commonly seen in association with deep immune-compromised status. Despite lethality of brain mucormycosis, the lack of common data specifically concerning clinical manifestations, radiographical characteristics, diagnostic methods, and management are severely felt.

Methods: In this systematic review and meta-analysis, we searched PubMed and Scopus (up to December 31, 2018) using the combination of the following keywords: (Mucor* or Zygomycete*) and (cereb* or ‘brain’ or central nervous system’ or ‘intracranial’) and found ~18462 articles. Only published case reports or case series with the definition of cerebral mucormycosis (finding the signs of this invasive mold in histopathological section or mycological examination and the presence of histopathological or radiological signs of brain involvement) were included. However, animal mucormycosis and papers in languages other than English or duplicates were excluded. Overall, 2875462 articles were reviewed and included consisting of 185 cases of cerebral mucormycosis.

Results: A total of 206 (91.7%) patients were male. The most common risk factor was diabetes mellitus (55%), followed by hematological malignancies (25.8%). Remarkably, among hematological malignancies, acute lymphoblastic leukemia was significantly associated with cerebral mucormycosis (P < 0.01). In terms of reported risk factors, only 14.3% of patients had hematological malignancies till 2000, while the percentage of cases (29.7%) with this risk factor increased significantly after 2000 (P = 0.04). The most common clinical symptoms were orbital (46.4%) and neurological symptoms (41.2%), while headache was present in 35.9% of patients and fever only in 6.6%. Of the patients reported, 40.4% died and there was a significant correlation between mortality rate and diabetes mellitus (P = .003), while the mortality rate was not associated with other risk factors such as hematological malignancies.

Conclusions: In patients with mucormycosis, the presence of orbital clinical symptoms may suggest cerebral involvement as much as the presence of neurologic symptoms. Finally, it can be said that Cerebral Mucormycosis is a very fatal mold infection, especially if it occurs in diabetic patients.