

SYMPTOMATIC ENDEMIC MYCOSES IN CHILDREN IN AN AREA OF LOW ENDEMICITY

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Background: Endemic mycoses (EM) are a group of infections caused by specific fungi concentrated in a certain geographic region influenced by climatic and environmental conditions. The clinical presentation and management varies depending on the host immune status. Recognition of symptomatic EM in a low incidence area, is crucial for early diagnosis and treatment. The primary objective of the study was to describe the epidemiology, clinical presentation, risk factors for infection, management and outcome of EM in children 0-18 years of age admitted to Texas Children's Hospital (TCH) from January 2012- May 2021.

Materials/Methods: A retrospective chart review of cases of EM was performed. Cases were identified through ICD 9 and ICD 10 codes. A proven EM case was defined as histopathology or direct microscopy staining/culture obtained from an affected site showing the distinctive form of the fungus. A probable EM was defined by evidence of environmental exposure to the fungus, a compatible clinical illness, and the presence of either fungal antigen in any body fluid and/or serum antibodies. The study was approved by the BCM Institutional Review Board.

Results: Twenty-nine cases met the diagnostic criteria for EM. Twenty were proven and 9 were probable. Twenty-seven cases (93%) were histoplasmosis and 1 each of blastomycoses and coccidioidomycoses. The median patient age was 10 years (range, 2 months-18 years) with 58.6% being male (n=17), 79% white (n=23) and 48% Hispanic (n=14). Sixteen (55%) had a preexisting immunodeficiency, 8 (27.5%) had no underlying conditions. Five (17%) patients with disseminated histoplasmosis were subsequently diagnosed with an immunodeficiency. The most common clinical presentations and radiographic findings are shown in the table. Three patients (10.3%) developed hemophagocytic lymphohistiocytosis. Twenty-eight (96.5%) patients were treated with an antifungal agent. The most common therapy was amphotericin B (17; 60.7%) and itraconazole (23; 82%). Combination antifungals were used in 6 patients (21.4%). The median duration of therapy was 227 days (range 6-1632 days). Outcome at the end of therapy is shown in the table.

Conclusions: Histoplasmosis was the most common EM diagnosed. An evaluation for EM should be pursued in a child presenting with fever, respiratory symptoms and presence of pulmonary nodules and/or hilar/mediastinal adenopathy. An immune work-up should be performed in any child diagnosed with a systemic EM.

Images / Graph / Table

Table: Most common clinical presentation, radiographic findings and outcome at the end of therapy in children with endemic mycoses

Clinical Presentation	Total number of patients (n=29)	%
Fever	24	82.7
Respiratory Symptoms	20	68.9
Gastrointestinal Symptoms	8	27.5
Skin Nodules	2	6.9
Radiographic Findings		
Pulmonary nodules and/or ground glass opacities	15	51.7
Hilar and/or mediastinal adenopathy	18	62
Splenomegaly	8	27.5
Hepatomegaly	4	13.7
Mediastinal mass	1	3.4
Outcome at the end of therapy		
Complete resolution of clinical and radiological signs/symptoms	13	44.8
Partial resolution of radiological signs, complete resolution of clinical symptoms	4	13.7
Stable disease on radiography, complete resolution of clinical symptoms	3	10.3
Progression of disease (radiographically and clinically)	1	3.4
Death (all deaths occurred in immunosuppressed patients)	4	13.7%
No follow up	4	13.7