

Background/Introduction

- 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 most common EM in Texas are coccidioidomycosis and histoplasmosis. Blastomycosis and paracoccidioidomycosis are rare in Texas.
- Clinical presentation and management can be variable depending on the immune status of the host.
- Recognition of symptomatic EM in a low incidence area is crucial for early diagnosis and treatment.
- Our primary aim of the study was to describe the epidemiology, clinical presentation, diagnosis, management, and outcome of endemic mycoses in a region of low endemicity.

Materials and Methods

- Retrospective chart review at Texas Children's Hospital between Jan 1, 2010 and Dec 31, 2020 to investigate the microbiology, treatment and outcomes in pediatric patients (0-18 years) with the diagnosis of endemic mycoses.
- Cases were identified using ICD-9 and ICD-10 codes for histoplasmosis, blastomycosis, coccidiomycosis and/or other endemic mycoses
 - **Proven cases** - histopathology or direct microscopy of specimens obtained from an affected site showed the distinctive form of the fungus and/or isolation by culture of tissue or blood
 - **Probable cases** defined as clinical and/or radiological findings consistent with fungal infection and positive fungal serology.
- Medical records were reviewed and clinical, radiographic, and laboratory, management and outcome data were recorded on a standard data collection form.
- Data was then coded and basic descriptive statistical analyses was performed
- Due to the abundance of *Histoplasma spp.* cases in comparison to other EM, data analysis was done specifically for this infection type.

Results

CLINICAL CHARACTERISTICS OF ADMITTED PEDIATRIC PATIENTS WITH ENDEMIC MYCOSES

Demographics	Value	Percentage/Range
Median Age of presentation (years)	10	0-18
Male:Female	1.3:1	-
Most common race	White	75%
Most common ethnicity	Hispanic	46%
Clinical data	Value	Percentage/Range
Proven cases	16	57%
Probable cases	12	43%
Travel History	11	39%
Patients with underlying diagnosis	15	54%
Patients with a new underlying diagnosis*	5	18%
Secondary HLH	3	11%
Median Length of Stay (Days)	27	Range: 1-593

It was a common finding to see EM manifesting as the presenting symptom of an immunodeficiency or oncologic process.

Clinical Presentation

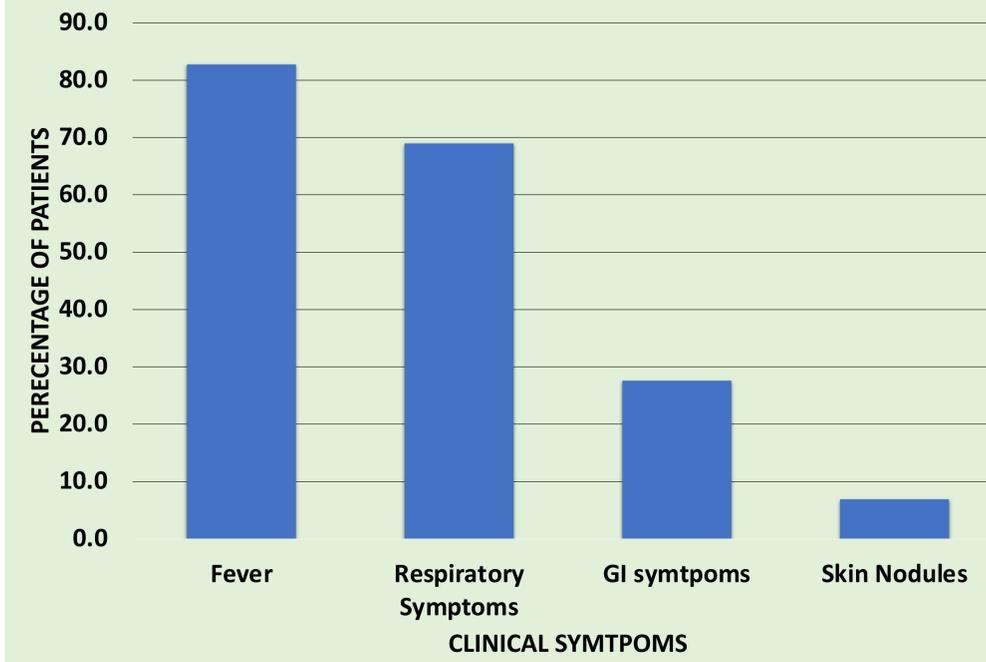


Figure 1. Common clinical manifestation of patients with histoplasmosis: Majority (80%) of cases presented with fever and respiratory symptoms as their presenting symptoms.

Common Radiographic Findings

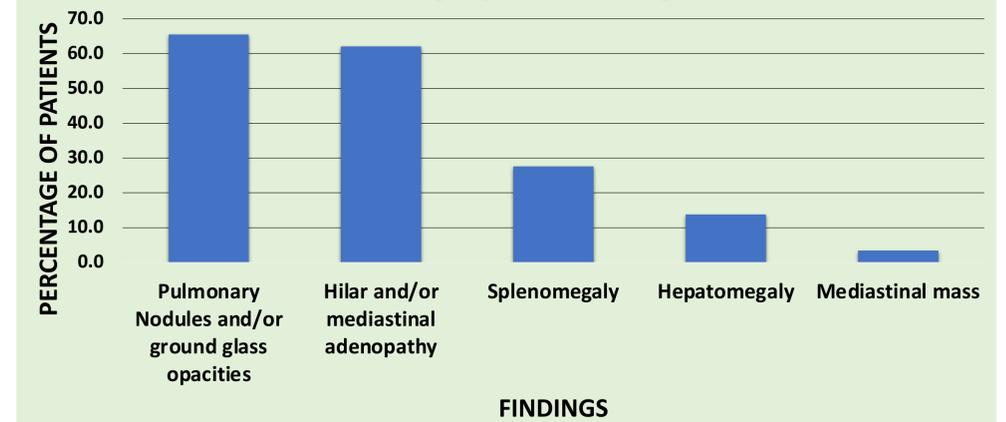


Figure 2. Common radiographic manifestations in histoplasmosis: Pulmonary nodules/ground glass opacities was the most common radiographic finding, most of whom had hilar/mediastinal lymphadenopathy as well.

Outcomes

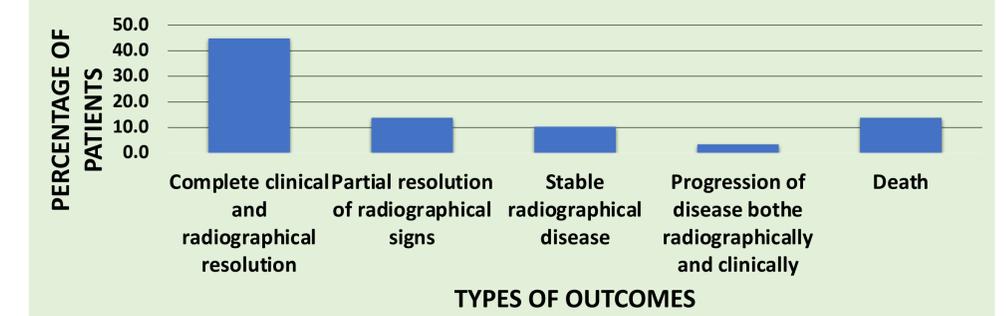


Figure 3. Outcomes of Histoplasmosis at end of therapy: Most commonly, patients had full recovery, however mortality rate was high at 15%. The latter were patients with prior immunodeficiency, most notably hemato-oncologic malignancies.

Conclusion

- Symptomatic EM admission was rare.
- Careful evaluation for EM should be pursued in a child with fever, respiratory symptoms, presence of pulmonary nodules and/or hilar/mediastinal adenopathy, It could also be a harbinger of an underlying immunosuppressive condition, hence immune/oncologic work up is recommended in a child who presents with disseminated EM (18% of cases).
- Since 11% of patients with EM infection developed a secondary HLH, EM should be in the differential diagnosis in patients presenting with secondary HLH.
- The most common therapy option was a combination of amphotericin into fluconazole. Median treatment length was 227 days.