Spectrum of *Scedosporium apiospermum* infections in a tertiary care centre in North India: Experience over three years

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Introduction

- *Scedosporium apiospermum* is a ubiquitous fungus.
- The clinical importance of this fungus is mostly seen with immunocompromised host and rarely in immunocompetent patients.
- It can present with wide variety of clinical spectrum involving skin & soft tissue (most common), central nervous system (CNS), lungs, eye, sinuses or other organs of the body including thyroid.
- Many cases are associated with exposure to water bodies like swimming, near drowning or drowning.

Objectives

- The primary objective of this study was to ascertain the spectrum of infections, predisposing factors, treatment and outcomes of patients suffering from *Scedosporium apiospermum* infections attending outpatient clinics or admitted to our hospital.

Methods

- This was a retrospective study of three years from January 2015 to December 2017.
- All cases of infections due to *Scedosporium apiospermum* were included in the present study.
- Demographic characteristics, clinical and laboratory data, and mycological examinations were analyzed. Identification was based on culture characteristics and microscopic identification (Fig 1a & b).
- Antifungal susceptibility was performed on four isolates according to CLSI document M38-A3 for moulds.

Results

- During the study period, a total of eight cases were identified.
- The mean age was 49 years (range of 2-78 years).
- There were five male and three female patients.
- Five of the eight cases presented with pulmonary symptoms.
- Of these two patients were known cases of HIV (2/5), two had COPD being treated with steroids (2/5) and one case had silicosis (1/5) (Table 1).
- There were two cases of invasive sinusitis and both the patients had no underlying condition.

- There was one case was of B cell acute lymphoblastic leukemia (ALL) who presented with acute suppurative otitis media with mastoiditis.
- Four *S. apiospermum* isolates tested had MICs in the range of 4-8 mg/L for amphotericin B, ≥ 64 mg/L for fluconazole, ≥ 16 mg/L for itraconazole and 0.25-0.5 mg/L for voriconazole, 0.5-1 mg/L for posaconazole, ≥ 64 mg/L for flucytosine, ≤ 0.015 -0.06 mg/L for caspofungin and 0.015-0.125 mg/L for micafungin.
- Six of the eight cases were treated with voriconazole and had a successful outcome. One patient of B cell ALL was given AmB for wider coverage, however succumbed to the illness. Another patient was lost to follow up.

Fig 1 (a). Microculture of an isolate showing greyish-white, suede-like to downy colony morphology. **Fig 1 (b)** Numerous single-celled, broadly clavate to ovoid conidia, rounded above with truncate bases are observed. Conidia are borne singly or in small groups on elongate, simple or branched conidiophores or laterally on hyphae.

Fig 2. (a)- MRI of patient no. 8 showing enhancement of maxillary sinus, ethmoid sinus, sphenoid sinus and orbit on right side. **Fig 2(b)-** MRI showing significant resolution after treatment.

Conclusion

- Infections due to *Scedosporium apiospermum* are on the rise.
- An early diagnosis helps in initiation of accurate therapy and successful management.

S.No.	Age	Sex	Predisposing Factors	Clinical Presentation	Sample	KOH	Treatment	Outcome
1	70y	M	COPD on long term steroids	Respiratory distress	Sputum	-	-	Unknown
2	44y	M	Silicosis	Fever with haemoptysis	BAL	+	Voriconazole	Survived
3	63y	F	COPD on long term steroids	Respiratory distress	BAL	-	Voriconazole	Survived
4	02y	F	B cell ALL with induction therapy	ASOM with mastoiditis	Nasal debris	+	AmB	Died
5	40y	M	HIV positive	Prolonged cough	BAL	-	Voriconazole	Survived
6	30y	F	HIV positive	Prolonged cough	BAL	-	Voriconazole	Survived
7	78y	M	Nil	Sinusitis	Sphenoid biopsy	+	Voriconazole	Survived
8	65y	M	Nil	Sinusitis	Maxillary bone	+	Voriconazole	Survived

Table 1: Demographic characteristics, clinical and laboratory data of patients with *Scedosporium apiospermum* infection