

Candida in the biliary tract: extrapolative PK PD considerations

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Objective: Candida norvegensis is an uncommon Candida species causing infection in immunocompromised hosts. It is intrinsically resistant to Fluconazole, which is commonly the empiric choice for therapy. A strong association with post-liver transplant status, as in this case and near-100% mortality, likely due to inappropriate antifungal therapy and lack of source control has been reported in the literature.

Methods and Results: Mr. AK, a 32-year-old gentleman, 10 months post-liver transplant recipient, had stenting done for biliary stricture. A month later, he developed ESBL E. coli cholangitis and bacteremia for which he was treated with Meropenem. Flaky pus was seen during stent exchange which grew Candida norvegensis on culture with 97% probability of identification

(Fig. 1). Suspecting cholangitic abscesses, patient would require at least 3 weeks of antifungals and Meropenem.

Since there is limited data about antifungal susceptibilities of *C. norwegensis*, MICs were generated on VITEK by using names of other Candida species. Micafungin was found to show an MIC of 0.12 and voriconazole of 0.25. EUCAST breakpoints are only provided for certain species and for others treatment is based on PK/PD considerations. The PK PD indices for efficacy of voriconazole is AUC/MIC of 30 and of Echinocandins is Cmax/MIC of 1R, which prompted extrapolation in this case.

The extrapolative PK PD considerations were as follows (Table 1).

Micafungin dose of 150 mg generates a biliary trough level of 1.9 mcg/mlR, which will lead to Cmax/MIC (1.9/0.12) of 15.83, exceeding the required target Cmax/MIC for cidal therapy of echinocandins which is 1R. Micafungin and Meropenem were administered for 3 weeks and the patient responded well to treatment.

Conclusion: This case highlights the importance of speciation of Candida spp, extrapolating MICs and breakpoints for species where data are not available, early source control and use of PK/PD considerations in choosing the appropriate antifungal agent on a case-by-case basis.

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	Vori	CAS	MICA	ANID
	Static	Cidal	Cidal and Biofilm activity	Cidal
Liver	6.89mcg/gm ^R	16x specific transporters	1x	10x
Bile	Unknown	0.3x	150mg generates a biliary	7
			trough level of	available, used
			1.9mgc/ml ^R	in a case
				report
			Cmax is likely higher	
			Therefore: Cmax/MIC	
			(1.9/0.12)= 15.83	
			which is more than	
			required target of 1	
			9 5000	

Laryngeal Mucormycosis: does mucor take the voice away?

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Objective: This case aims to highlight a unique presentation of Mucormycosis

Methods and Results: A 57-year-old retired office supervisor, presented to the ENT department with complaints of hoarserections and exemise. A 3-7-year-out retired once supervisor, presented to the EASY department with companies to instance ness of voice ending with almost complete dysphonia over 6 months. There were no complaints of stridor, dysponea or dysphagia. He had no history of prior surgery or tracheal intubation. On examination, a lesion over his right vocal cord was noted (Fig. 1) and underwent surgical excision of the lesion. HPE of the lesion (Fig. 2) showed hyperplastic stratified squamous epithelium which was partly ulcerated and covered by thick bands of necro-inflammatory material. Within the necrotic material were seen broad aseptate fungal hyphae. Beneath the necrotic material was inflamed granulation tissue with fibrosis. No tissue or vascular invasion was noted as per the report, however there was a recurrence of the lesion after 15 days.

however there was a recurrence of the lesion after 13 days.

ID team opinion was sought in view of need for antifungals. Owing to financial constraints, CT chest could not be done, but his chest X-ray was normal. His HbA1c was 7.5%, which was suggestive of newly detected diabetes mellitus (DM).

In this case, even though no angioinvasion or tissue invasion was reported, the presence of hyphae in the area of necrosis, the presence of inflammatory local tissue reaction, coupled with newly detected DM, prompted the ID team to advise treatment with amphotericin B followed by suspension posaconazole (GR was not available at the that time). The patient was not willing for treatment at the time. However, local recurrence of the lesion occurred 2 weeks later. Surgical resection along with posaconazole,

TDM and close follow-up was advised. However, the patient was lost to follow-up, possibly due to loss of confidence in us?

Conclusion: The importance of sending every surgically excised tissue for histopathology and culture has been highlighted by this case. Early ID opinion and AF therapy could have averted recurrence and loss of patient confidence. Chronic Granulomatous form of mucormycosis though rare, needs timely diagnosis and treatment in the form of surgical resection as well as systemic antifungal therapy.

