28th ECCMID EUROPEAN CONGRESS OF CLINICAL MICROBIOLOGY AND INFECTIOUS DISEASES
Madrid, Spain
21 – 24 April 2018

O0942 EUCAST susceptibility testing of rezafungin (CD101): activity against Candida auris

Karin Meinike Jørgensen[1], Anuradha Chowdhary[2], Jacques F. Meis[3 4], Maiken Cavling Arendrup*[1 5 6]

[1]Statens Serum Institut, Unit of Mycology,, Copenhagen, Denmark, *[2]Vallabhbhai Patel Chest Institute, Dept Medical Microbiology, New Delhi, India*, *[3]Canisius Wilhelmina Hospital, Department of Medical Microbiology and Infectious Diseases, Nijmegen, Netherlands*, *[4]Centre of Expertise in Mycology Radboudumc/Canisius-Wilhelmina Hospital, Nijmegen, Netherlands*, *[5]Copenhagen University Hospital Rigshospitalet, Dept Clinical Microbiology, Copenhagen, Denmark*, *[6]University of Copenhagen, Dept Clinical Medicine, Copenhagen,*

Background: *Candida auris* is a multidrug-resistant yeast rapidly emerging as a significant cause of nosocomial infections. Here, we report the *in vitro* susceptibility of *C. auris* to the new long-acting echinocandin rezafungin (CD101) in development for treatment and prophylaxis of invasive fungal infections and currently undergoing phase II clinical trials for treatment of candidaemia and invasive candidiasis.

Materials/methods: EUCAST AFST according to E.Def 7.3.1 was performed on 122 Indian clinical *C. auris* isolates and *C. auris* reference strains KCTC17809, KCTC17810 and JCM15448. Cell-culture treated microtitre plates (Nunc, ThermoFisher Scientific, cat. no. 167008) were prepared using the ISO method for rezafungin and fluconazole and using serial dilution for amphotericin B, anidulafungin, micafungin, isavuconazole, itraconazole, posaconazole and voriconazole generating 1125 MICs in total.

Results: The modal MIC, MIC_{50}, MIC_{90} and range of rezafungin against *C. auris* were 0.25 mg/L, 0.25 mg/L, 1 mg/L and 0.06-16 mg/L, respectively. For the reference strains, the range, MIC_{50} and MIC_{90} were all 0.06 mg/L. On a mg/L basis, rezafungin was more active than amphotericin B and fluconazole for which the MIC_{50} values were two and ten dilution steps higher, respectively (MIC_{50} 1 mg/L for amphotericin B and MIC_{50} 256 for fluconazole). Additionally, rezafungin was equally as active (MIC_{50} values within ± 1 dilution step) as anidulafungin, micafungin, isavuconazole and itraconazole. Finally, posaconazole was more active on a mg/L basis (MIC_{50} 0.03 mg/L). For the three echinocandins, eight isolates (6.6%) separated from the WT population due to MIC values ≥5 dilution steps higher than the MIC_{50}, strongly suggesting acquired echinocandin resistance mechanisms.

Conclusions: Rezafungin showed promising activity against the clinical *C. auris* isolates. On a mg/L basis rezafungin was more or equally active than currently licensed compounds (anidulafungin, micafungin, amphotericin B, fluconazole and voriconazole). A small population presented elevated MICs showing cross-resistance to the included echinocandins. However, with a long half-life allowing for once-weekly IV dosing, rezafungin may be an attractive alternative to currently available echinocandins, allowing patients to be discharged if clinically possible, thus reducing risk for further transmission of this multidrug-resistant organism in the hospital environment.

Table. MICs (mg/L) of rezafungin (Rzf) and comparator antifungals against the tested 122 clinical *C. auris* isolates. The MIC_{50} is highlighted in bold, the modal MIC underscored and tested concentration range indicated in white. Off-scale MICs are shown in the first concentration outside the tested range.

	0.004/<0.008	0.008	0.016	0.03	0.06	0.125	0.25	0.5	1	2	>2/4	8	16	32	64	128	256	>256
Rzf					3	22	**63**	16	7	3		6	2					
AMB								14	**8**									
Anf			1	12	34	**30**	12	12	11	2	8							
Mfg				5	30	**69**	9				8							
Flu									1				4	10	6	14	**33**	54
Isa	20	1	1	19	9	**19**	21	21	6	5								
Itr	2	2	9	5	14	**34**	36	19	1									
Psc	17	5	19	**34**	32	11	3	1										
Vor	1			1	1	16	13	**34**	38	13	5							