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Paper Poster Session

Update in fungal resistance and susceptibility

Anidulafungin reduced susceptibility of *Candida glabrata* infective endocarditis

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Background: Echinocandin resistance is increasing in *Candida glabrata* for mutations in the hot spot (HS) regions of *FKS1* and *FKS2* genes. We present a case of a 52-year-old woman diagnosed with *Candida glabrata* infective endocarditis post-mortem. The patient, with history of arterial hypertension, diabetes mellitus and psychiatric problems came to the emergency department for decreased level of consciousness, respiratory insufficiency and gastrointestinal bleeding being diagnosed with esophagitis. Admitted to the intensive care unit, she was diagnosed with respiratory distress and sepsis. Transthoracic echocardiography showed diastolic dysfunction. The patient was initially treated with linezolid and meropenem. Computed tomography (CT) angiography scan of thorax and abdomen showed a pleural effusion. In addition, cranial CT scan revealed ischemic infarction. Finally, the patient was diagnosed with mitral and aortic valve endocarditis by transthoracic echocardiography. Treatment with ampicillin, cloxacillin, gentamicin and anidulafungin was given but the patient died due to multiorgan failure.

Material/methods: Clinical samples of the blood, urine and respiratory secretions were screened for the presence of bacteria and fungi (including long incubation). In addition, samples of blood, pericardial fluid, valve tissue and lung biopsy were assessed postmortem. Both, valve tissue and pericardial fluid were sent to the reference center (Carlos III Health Institute, ISCIII) for the molecular study of *Bartonella*, *Coxiella burnetti* and *Trophiema whipplei*

Results: All microbiological studies were negative. *Candida glabrata* was isolated from both aortic and tricuspid valves as well as from the blood sample. Antifungal susceptibility was determined using EUCAST (European Committee on Antimicrobial Susceptibility Testing) breakpoints. Minimum inhibitory concentrations (MICs) values of caspofungin and anidulafungin were 0.75 µg/ml and 0.125 µg/ml, respectively. The strain was submitted to the Mycology Reference Laboratory (ISCIII) in order to confirm its resistance where HS region of *FKS1* was sequenced as described in PubMed PMID: 22391532. DNA sequencing revealed a single mutation (substitution) at position 663.

Conclusions: The echinocandins are used as the primary therapy for the treatment of *C. glabrata* disease. On the other hand, empirical antifungal therapy with echinocandins is giving rise to the appearance of strains with reduced susceptibility.