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Diagnose fungal infectivities of catheters: What are the appropriate techniques to choose

SML Seddiki^{1,2}, Z Boucherit-Otmani¹ and D Kunkel³

¹University of Tlemcen, Algeria

²University Center of Naama, Algeria

³Dennis Kunkel Microscopy Inc, Kailua, USA

The nosocomial infections is a real public health problem due to its epidemiological frequency. These infections can occur at any time when using catheters. As a result of their alterations by bacteria and/or fungal microorganisms, these medical devices can be the support of biofilms and, therefore, become a potential source of infection. These alterations are ordered into three classes, named "Types of Infectivities", which may be simple contaminations/colonizations or serious infections. On the other hand, it has been described that the diagnosis of catheter-related candidemia is difficult to prove before the removal of the catheter. Whatever the clinical data is, the only way to assert catheter infection is to remove it and put it into the culture. However, bacterial infectivities were well studied using the technique of (Brun-Buisson et al., 1987); conversely, no technique was designed for yeast. It's why we aimed to adapt the bacterial technique toward the evaluation of the fungal infectivities. In order to check its reproducibility, both techniques were used. The first one consists in carrying out a culture of the sample on agar, and the results were then evaluated by an enumeration of CFU/mL. The second was based on a direct enumeration of yeasts using a hemocytometer and then, the results were reported in cells/mL. The results obtained showed that the Brun-Buisson technique better expresses the fungal contamination or colonization of catheters; however, the modified technique was well appropriate to their infections considering the reduced time for its realization. For that reason, the simultaneous use of both techniques may be the best way to provide the clinician with useful information to guide his/her practical attitude towards establishing an antifungal treatment or not.

seddiki.med@gmail.com