

Identifikasi Candida Krusei Isolat Jakarta yang Peka dan Resisten terhadap Flukonazol dengan Analisis Molekular = Molecular Based Identification of Fluconazole Susceptible and Resistant Candida krusei of Jakarta Isolates

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Abstrak

ABSTRAK

Candida krusei merupakan lima besar spesies Candida terbanyak penyebab kandidosis. Candida krusei sulit diobati karena memiliki resistensi primer terhadap flukonazol. Data pola kepekaan C. krusei di Jakarta berbeda dengan di dunia karena masih ditemukan isolat sensitif terhadap flukonazol. Tujuan penelitian ialah mengidentifikasi isolat C. krusei isolat Jakarta yang peka dan resisten terhadap flukonazol. Sampel penelitian menggunakan enam isolat uji C. krusei (empat resisten dan dua sensitif flukonazol) dan dua isolat kontrol kualitas yaitu C. albicans dan C. parapsilosis yang merupakan isolat koleksi Laboratorium Mikologi Departemen Parasitologi Fakultas Kedokteran Universitas Indonesia. Analisis yang dilakukan adalah fenotipik berupa makroskopik, mikroskopik serta biokimia. Analisis molekular menggunakan teknik PCR pada regio ITS (NCBI dan ISHAM) dan D1/D2 (NCBI). Hasil perbandingan sekuens ITS antar isolat uji didapatkan satu perbedaan basa pada urutan basa 465. Hasil perbandingan sekuens regio D1/D2 tidak ditemukan perbedaan basa. Analisis multi gene sequence menunjukkan kemiripan dengan isolat C. krusei CBS 5147 yang sensitif terhadap flukonazol. Analisis filogenetik regio ITS dan D1/D2 memperlihatkan isolat uji merupakan C. krusei. Identifikasi ke enam isolat Jakarta berdasarkan analisis fenotipik dan analisis molekular menunjukkan bahwa semuanya merupakan C. krusei.

ABSTRACT

Candida krusei is one of the big five species of Candida caused disease. Candida krusei becomes difficult to treat due to the primary resistance against fluconazole. Examination data of resistance in C. krusei in Jakarta contrast to the world is isolates which are still sensitive to fluconazole. The objective of this study was identified of C. krusei of Jakarta's isolates which is sensitive and resistant fluconazole. The samples used 6 isolates C. krusei (four resistant and two sensitive fluconazole) and two isolates quality control the C. albicans and C. parapsilosis were cultured collection of Mycology Laboratory Parasitology's Department, Faculty of Medicine, Universitas Indonesia. Analysis phenotypic using by macroscopic, microscopic and biochemistry. Analysis molecular was done using PCR method for ITS (NCBI and ISHAM) and D1/D2 (NCBI) regions. The results of ITS sequences comparison with isolates test were found one difference base at 465. The results of D1/D2 sequence comparison did not find the difference of sequences base, and analysis of multi Gene sequence showed the isolated test had a similarity with C. krusei CBS 5147 which sensitive fluconazole. Phylogeny of the region ITS and D1/D2 showed the isolates test was C. krusei. Identification six isolates based on analysis phenotypes and analysis of molecular was C. krusei.