

Uji kepekaan dermatofita terhadap flukonazol korelasi metode difusi cakram dengan metode mikrodilusi kaldu CLSI 2008 M38 A2 = Susceptibility testing of dermatophytes against fluconazole correlation between disc diffusion and broth microdilution methods CLSI 2008 M38 A2

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Abstrak

Latar belakang. Dermatofitosis adalah infeksi jamur yang disebabkan dermatofita, yang banyak terjadi di negara tropis dan masih menjadi masalah kesehatan kulit di masyarakat, terutama di Indonesia. Infeksi yang disebabkan dermatofita memerlukan pengobatan antijamur yang lama, dan dapat terjadi kekambuhan dan kronisitas. Oleh karena itu, uji kepekaan dermatofita terhadap antijamur sangat menunjang untuk penatalaksanaan pasien. Metode standar untuk uji kepekaan dermatofita yang diakui oleh Clinical and Laboratory Standards Institute (CLSI) adalah metode mikrodilusi kaldu (M38-A2). Metode berbasis agar seperti metode difusi cakram adalah metode alternatif lain yang menjanjikan, karena lebih sederhana, memiliki reproduktibilitas tinggi, murah, dan lebih cepat dibandingkan metode mikrodilusi kaldu. Tujuan penelitian. Penggunaan metode difusi cakram untuk alternatif uji kepekaan dermatofita terhadap flukonazol.

Metode Penelitian. Desain penelitian ini adalah studi potong lintang. Sampel diperoleh dari pasien dengan diagnosis dermatofitosis di poliklinik Departemen Ilmu Penyakit Kulit dan Kelamin Rumah Sakit Umum Pusat Nasional Cipto Mangunkusumo, Jakarta, selama kurun waktu November 2012- Agustus 2013 Hasil dan Pembahasan. Jumlah sampel dermatofita yang diuji adalah 40 sampel yang diisolasi dari 113 spesimen klinik, yang terdiri dari kerokan kulit, kuku, dan rambut. Dilakukan uji kepekaan terhadap flukonazol menggunakan metode difusi cakram dan metode mikrodilusi kaldu M38-A2 CLSI pada 5 spesies yaitu *Trichophyton rubrum* (20), *Trichophyton mentagrophytes* (11), *Epidermophyton floccosum* (4), *Microsporum gypseum* (3) dan *Microsporum canis* (2). Korelasi yang signifikan diperoleh antara diameter zona hambat (DZH) dan kadar hambat minimum (KHM) flukonazol terhadap dermatofita ($r = - 705$; $p < 0,001$). Sebaran nilai DZH terhadap KHM flukonazol pada kelima spesies dermatofita sangat bervariasi. Nilai ambang diameter zona hambat resisten *Trichophyton rubrum* terhadap flukonazol adalah 43 mm, dengan nilai sensitivitas 78% dan spesifisitas 55% pada kurva ROC, dengan nilai area under curve (AUC) 0,712 dan nilai $p > 0,05$.

Kesimpulan. Metode difusi cakram dapat menjadi pemeriksaan alternatif yang mudah untuk uji kepekaan dermatofita terhadap antijamur di laboratorium klinik rutin, walaupun masih perlu diujikan kembali dengan sampel yang lebih banyak.

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Background. Dermatophytosis is a fungal infection caused by dermatophytes, which is major public skin problems in tropical countries, particularly in Indonesia. Dermatophyte infections need long-term treatment with antifungal agents, and often become recurrent and chronic. Therefore, antifungal susceptibility testing of dermatophytes against antifungal is helpful to support patient management. The standard method for antifungal susceptibility testing of dermatophytes which is approved by Clinical and Laboratory Standards

Institute (CLSI) is broth microdilution (M38-A2). Agar based methods such as disk diffusion is another promising method, because it is simple, reproducible, and faster than broth microdilution. Objective. To use disk diffusion method as a promising antifungal susceptibility testing for dermatophytes against fluconazole. Methods. Design of this study is cross sectional. Samples were collected from patients with clinical diagnosis of dermatophytoses in the clinic of Dermatology and Venereology in Cipto Mangunkusumo National Hospital Jakarta, during November 2012 to August 2013.

Result and Discussion. Total of 40 dermatophytes samples were isolated from 113 clinical specimens, which were consisted of skin scrapings, nails, and hair. Susceptibility against fluconazole using the disc diffusion method and broth microdilution method CLSI M38-A2 were tested to 5 species, i.e. *Trichophyton rubrum* (20), *Trichophyton mentagrophytes* (11), *Epidermophyton floccosum* (4), *Microsporum gypseum* (3) and *Microsporum canis* (2). A significant correlation was found between the inhibition zone diameter (IZDs) and minimum inhibitory concentration (MICs) to fluconazole ($r = -0.705$; $p < 0.001$). The distribution of inhibition zone diameter versus minimum inhibitory concentration of fluconazole on five species of dermatophytes was diversified. Threshold value of inhibition zone diameter 43 mm for *Trichophyton rubrum* resistance against fluconazole, sensitivity 78% and specificity of 55% were obtained in the ROC curve, and the value of the area under the curve (AUC) 0.712, $p > 0.05$.

Conclusion. Disk diffusion could become a promising method for the antifungal susceptibility testing of dermatophytes against fluconazole in routine clinical laboratory, even though it still needs to be tested again with more samples.