INTISARI

Latar Belakang: Infeksi *Candida spp*. semakin meningkat dalam beberapa dekade terakhir dan sering dikaitkan dengan mortalitas yang tinggi. Hal ini dipersulit dengan meningkatnya angka resistensi terhadap triazol, kelompok obat antifungal yang paling sering digunakan dalam terapi kandidiasis. Distribusi spesies dan profil resistensi *Candida spp* terhadap triazole juga sangat bervariasi pada banyak negara, menunjukkan pentingnya data epidemiologi yang bersifat lokal. Tantangan manajemen kandiasis juga pada diagnosis dimana *Candida spp* merupakan flora normal umum di tubuh manusia. Manajemen pasien yang tepat memerlukan data epidemiologis yang baik untuk mendukung keputusan klinis yang terukur sehingga akan memperbaiki luaran pasien. Namun studi tentang hal-hal tersebut masih terbatas di Indonesia.

Tujuan: (1) Untuk mengukur frekuensi dan distribusi spesies *Candida spp* dari isolat klinik yang didapat di RSA UGM; (2) Untuk menganalisa korelasi antara profil laboratorium dan karakteristik klinik dan luaran dari pasien yang memiliki hasil kultur *Candida spp*. di RSA UGM

Alat dan bahan: Rekaman data laboratorium dan karakteristik klinis pasien didapatka dari rekam medis elektronik. Distribusi spesies dan profil resisitensi triazole dianalisis secara deskriptif. Korelasi antara profil laboratorium dan karakteristik klinis terhadap luaran pasien dianalisis secara komparatif secara bivariat dan multivariat.

Hasil: Dari 185 isolat yang didapatkan, tiga spesies Candida tersering adalah: *C. tropicalis*, *C. albicans*, *C. parapsilosis* (n=95 (51,4%), n=74 (40%), dan n=4 (2,2%), berurrutan). Frekuensi resistensi triazole pada *Candida spp*. adalah 4,9%. Tidak ada perbedaan bermakna dalam hal profil laboratorium dan karakteristik klinik baik pada kelompok *C. albicans* vs. NAC, maupun pada kelompok triazol-sensitif vs triazole-resisten. Status perawatan, lama rawat inap, jumlah komorbid, Riwayat pemberian steroid, Candida score ≥3, dan penggunaan ventilasi mekanik berkorelasi terhadap luaran kematian secara bermakna, dengan perawatan ICU dan *Candida score* ≥3 memiliki korelasi yang paling kuat dan independent terhadap luaran kematian. (p=<0.001; OR 11.8; 95% CI 4.368-31.962 and p=0.004; OR 3.9; 95% CI 1.562-9.065, respectively).

Kesimpulan: *Candida spp* yang paling sering diisolasi pada pasien di RSA UGM adalah *C. tropicalis*. Frekuensi resistensi triazol pada *Candida spp* di RSA UGM pada periode 2019-2021 adalah 4,9%. Pada pasien yang hasil kulturnya *Candida spp*., perawatan di ICU dan memliki *Candida score* ≥3 memiliki korelasi yang independen terhadap luaran kematian.

Kata kunci: Kandidiasis, resistensi triazol, distribusi *Candida spp*.

ABSTRACT

Background: *Candida spp* infections have increased over the last decades and are frequently associated with high mortality. It is complicated by the increasing triazole resistance, the most common arsenal used to treat Candidiasis. Moreover, the species distribution and resistance rate are highly varied among countries, emphasising the importance of epidemiology. Not only is the treatment challenging, but the diagnosis is also complex due to the nature of Candida colonization in many body sites. Good patient management requires a strong database of local epidemiology that supports a timely clinical decision involving diagnosis and treatment that will eventually improve the outcome. However, the study of Candidiasis in Indonesia correlating these factors is still limited.

Objective(s): (1) To investigate the frequency of triazole-resistant and the species distribution of *Candida spp* clinical isolates at UGM Academic Hospital; (2) To analyze the correlation between the laboratory profile and the clinical characteristics with the outcome of patients whose specimens yielded *Candida spp* at UGM Academic Hospital.

Materials and methods: Recorded laboratory data and clinical characteristics of patients whose specimens yielded in *Candida spp* are collected through electronic health records. Species distribution and triazole resistance profile were analyzed descriptively. The correlation of laboratory profile and clinical characteristics with the outcome were analyzed comparatively using bivariate and multivariate analysis.

Results: Of 185 isolates included, the three major *Candida spp* isolated were *C. tropicalis*, *C. albicans*, *C. parapsilosis* (n=95 (51,4%), n=74 (40%), and n=4 (2,2%), respectively). The triazole resistance rate during 2019-2021 was 4,9%. No significant differences were found between *C. albicans* vs Non-albicans Candida groups. No significant differences were found between the triazole-susceptible vs the triazole-resistant groups. Ward status, length of stay, number of comorbid, history of steroids, Candida score of ≥3, and mechanical ventilation were significantly correlated with poorer prognosis. Intensive care status and a Candida score ≥3 were found to have the strongest and independent correlation with the non-survivor group (p=<0.001; OR 11.8; 95% CI 4.368-31.962 and p=0.004; OR 3.9; 95% CI 1.562-9.065, respectively).

Conclusion: The most common *Candida spp* isolated in UGM Academic hospital was *C. tropicalis*. The frequency of triazole resistance among *Candida spp* in RSA UGM during 2019-2021 was 4,9%. Among patients whose culture yielded *Candida spp*, being in the intensive care unit and having a Candida score of ≥3 were independently correlated with poorer outcomes.

Keywords: *Candida spp*. infections, *Candida spp*. distribution, triazole resistance, invasive candidiasis