

# Hubungan keberadaan cryptococcus neoformans di lingkungan rumah pasien terinfeksi HIV dengan kriptokokosis meningeal = Association between cryptococcus neoformans from the environment of HIV infected patient house with cryptococcal meningitis / Machrumnizar

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Abstrak

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Cryptococcus neoformans adalah khamir berkapsul penyebab kriptokokosis, predileksi di SSP terutama pada individu imunokompromi. Cryptococcus hidup bersama mikrobiom di alam. Penelitian bertujuan mengetahui hubungan kriptokokosis meningeal pada pasien HIV dengan keberadaan Cryptococcus di alam. Sampel yang diteliti adalah material pepohonan di lubang pohon dan tanah, debu rumah, kotoran burung, dan air dari 22 rumah pasien HIV dengan kriptokokosis (kelompok kasus) dan tanpa kriptokokosis (kelompok kontrol). Identifikasi Cryptococcus dilakukan berdasarkan karakter morfologi dan fisiologi-biokimia. Total 297 isolat jamur ditemukan Cryptococcus, Candida, Saccharomyces, Rhodotorula, Aspergillus, Neurosporium dan Penicillium. Tujuh isolat Cryptococcus neoformans ditemukan dari 120 khamir yang diperiksa berasal dari debu rumah, kotoran burung kenari, lubang pohon mangga, lapukan daun rambutan. Berdasarkan statistik terdapat korelasi positif signifikan antara keberadaan Cryptococcus neoformans di lingkungan dengan kriptokokosis pada pasien HIV ( $p=0,013$ ;  $r=0,47$ ) namun tidak ada korelasi positif dengan musim ( $r=-0,069$ ). Hasil tersebut menunjukkan bahwa terdapat hubungan antara Cryptococcus neoformans di lingkungan rumah pasien HIV dengan kriptokokosis meningeal. Di alam Cryptococcus neoformans ditemukan bersama Cryptococcus albidus dan Aspergillus niger.

## **ABSTRACT**

Cryptococcus neoformans is an encapsulated yeast cause cryptococcosis with a predilection for the CNS, especially individual with immunocompromise. The fungus lives with other fungi in nature. This study investigates the relationship between meningeal cryptococcosis in HIV patients with the presence of Cryptococcus in nature. The samples studied are decaying wood and leaves, tree hollows, dust, bird droppings, and water from 22 of HIV-infected patients house with cryptococcosis (case group) and without cryptococcosis (control Group). Identification of Cryptococcus was based on morphological and fisiologi-biochemistry characters. From total 297 fungal isolates we found Cryptococcus, Candida, Saccharomyces, Rhodotorula, Aspergillus, Neurosporium and Penicillium. From 120 yeast isolates we found seven Cryptococcus neoformans from dust, canary dropping, mango tree hollow, decaying rambutan leaves on the ground. The statistical analysis showed a significant association among cryptococcosis in HIV-infected patients with the environment ( $p=0.013$ ). Based on statistic there is a significant positive correlation between the presence of Cryptococcus neoformans in the environment with cryptococcosis in HIV-infected patients ( $r=0.47$ ), but no positive correlation with the season ( $r=-0.069$ ). These results indicate that there is a relationship between Cryptococcus neoformans in the environment of HIV-infected patients house with meningeal cryptococcosis. In nature Cryptococcus neoformans is found along Cryptococcus albidus and Aspergillus niger.