
CRYPTOCOCCUS NEOFORMANS INFECTION IN SOLID ORGAN TRANSPLANT (SOT) RECIPIENTS

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OBJECTIVE: *C. neoformans* is the third most common type of fungal infection complicating SOT. We performed a retrospective study to assess the clinical characteristics and outcomes of cryptococcal infection following SOT.

METHODS: Using the Mayo Clinic clinical microbiology laboratory database, 89 patients with cryptococcal infection, as indicated by culture, microscopy, and/or serology, were identified during a 10-year period from 1990 to 1999. The medical records of SOT patients were reviewed for clinical characteristics, treatment and outcome.

RESULTS: Fifteen (17%) of 89 cases occurred in kidney (n = 7), liver (n = 5), or heart (n = 3) transplant recipients. The mean patient age was 55 years (range, 40-71); 11 were male. The median time to onset of infection was 30 months post-SOT (range, 2-159); 75% of cases occurred > 6 months post-SOT. All patients were receiving prednisone (median daily dose, 12.5 mg); 11, cyclosporine; and 7, azathioprine. The median CD4 count at diagnosis was 85 cells/uL (range, 5-195). Nine (60%) of the 15 patients had meningitis with or without other organ involvement; headache (9/9), fever (8/9), and changes in mental status (2/9) were the presenting symptoms; spinal fluid studies [median (range)] included WBC 20/uL (1-56), protein 98 mg/dL (52-495), glucose 51 mg/dL (10-137), and cryptococcal antigen titer of 1:128 (up to 1:8192). Six (40%) of the 15 patients had non-meningeal [urinary tract (n = 2) and pulmonary (n = 4)] infections, including two with asymptomatic pulmonary cryptococcoma. Skin involvement was documented by biopsy in 3 (20%) and skeletal symptoms were observed in 4 (27%) of 15 patients. Fourteen patients received therapy with fluconazole alone (n = 4) or an amphotericin B preparation (n = 10; median total dose of amphotericin B deoxycholate, 1161 mg) in combination with 5-FC (n = 5) followed by fluconazole for a median duration of 4 months (range, 0.5-48). During the median follow up period of 44 months (range, 0.5-123), two patients died of cryptococcal infection; nine patients were cured and died of causes unrelated to cryptococcal infection; three patients were alive and free of cryptococcal infection; and one patient remained on fluconazole because of relapse following the discontinuation of anti-fungal therapy.

CONCLUSION: Cryptococcal infection is usually a late complication of SOT. While meningitis is the most common presentation, the clinical spectrum varies widely from an asymptomatic lung nodule to fatal multiorgan disease. Amphotericin B and/or fluconazole are effective for treatment. The duration of drug administration should be individualized. Multicenter collaboration is being undertaken to further identify risk factors and to define optimal strategies for prevention and treatment of cryptococcosis in SOT recipients.