Cryptococcal meningitis related to HIV infection with resistance to fluconazole : A case report

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Abstract

Cryptococcal meningitis is a common opportunistic infection in AIDS patients. We present the case of a 26 y.o. HIV-positive man who presented in September 2011 with severe headache & was diagnosed as Cryptococcal meningitis which was confirmed by positive Cryptococcal antigen CSF (>512X). The patient was commenced with intravenous (IV) Amphotericin B (d-AMB) plus Flucytocin(5-FC) & subsequently showed a marvelous response. Afterwards, both the blood & CSF culture yielded *C. neoformans* which is susceptible to fluconazole(FCZ) (Blood/CSF MIC <=0.5). After one month of such combined treatment, he was changed to oral FCZ 800 mg QD with 5-FC 1000mg QID. He then took FCZ 200 mg QD since December 2011. Severe headache reappeared in April 2012. In June 2012 he was readmitted with signs and symptoms of meningitis. CSF examination again showed budding yeast cells but later on CSF culture revealed *C. neoformans* which is resistant to to FCZ (Blood MIC =32, CSF MIC=64). We treated him with IV d-AMB & 5-FC but the patient's condition continued to deteriorate and he died 4 weeks after admission. Little is known about the molecular mechanisms responsible for cryptococcal resistance to azoles except for the case of an *ERG*11 mutation reported in the strain isolated from an AIDS patient who had recurrent cryptococcal meningoencephalitis. A recent article in the Antimicrobial Agents and Chemotherapy, July 2009 delineated Heteroresistance to FCZ in *C. neoformans*. The study indicated that Heteroresistance to FCZ in *C. neoformans* is intrinsic, and the mechanisms that control the level of heteroresistance to azoles in each *C. neoformans* strain also contribute to the fungus' ability to respond to various other environmental stresses. Our case might be relevant to that. Determination of the heteroresistance level for the diagnostic strain of each cryptococcosis case will offer helpful insights into the management of long-term cryptococcosis therapy.