Clinical outcome of cryptococcal meningitis of HIV-infected and non-HIV-infected patients in Hong Kong: a two-center retrospective review

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Background
While cryptococcal meningitis is a common opportunistic infection in AIDS patients, it also causes substantial morbidity and mortality in immunocompromised patients without HIV infection.

Methods
This is a retrospective analysis of patients with cryptococcal meningitis in the Queen Elizabeth Hospital and Pamela Youde Nethersole Eastern Hospital, from 2002 to 2014. Patients who had positive cerebrospinal fluid (CSF) cultures for Cryptococcus were identified by using VITEK 2 and API 20C AUX systems. Clinical records, laboratory and radiological results were reviewed. Mortality data and time for CSF sterilization (number of days from antifungal therapy initiation to first negative CSF cultures) were reviewed. We performed survival analysis to compare 100-day mortality and time for CSF sterilization in HIV-infected and non-HIV-infected patient groups.

Results
37 patients were identified. 26 (70.2%) were male. Median age was 48 years (IQR 38-66 years). 18 patients were HIV-infected. Non-HIV-infected group was significantly older than HIV-infected group (P<0.01). Among the 19 non-HIV-infected, 8 patients (44.4%) have received prednisolone >=5mg/day (or equivalent) for at least 3 weeks. 3 of them were kidney transplant recipients. Time from hospital admission to first diagnostic lumbar puncture was significantly longer in non-HIV-infected patients (median 6 days, IQR 1-4.25 days, P=0.01483) (figure 1). All patients received amphotericin B deoxycholate and flucytosine for induction. Median serum but not CSF cryptococcal antigen titer was significantly higher in HIV-infected group (1:1024 versus 1:128 in non-HIV-infected group, P<0.005). There was significantly higher 100-day mortality in non-HIV-infected group with a hazard ratio of 4.8 (95% CI 1.4-16.6, P=0.02) compared to HIV-infected groups (figure 2). CSF sterilization was faster in non-HIV-infected group with a hazard ratio of 3.2 (95% CI 1.4-6.9, P<0.01) when compared to HIV-infected group (figure 3).

Conclusion
There was significantly higher mortality and slower CSF sterilization rate in non-HIV-infected patients. Longer duration for diagnosis might contribute the poorer outcome in the latter group.