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Paper Poster Session

Fungal infection epidemiology

A national retrospective study of *Candida* infections of the central nervous system

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Background: Central nervous system (CNS) *Candida* infections are rare and life-threatening, reported in patients with acquired immunodeficiencies due to immunosuppressive treatments, HIV infection, intravenous drug users and preterm neonates. The objectives of our study were to describe risk factors, clinical and radiological presentation, diagnostic methods, therapeutic management and prognosis of these infections.

Material/methods: We performed a national multicenter retrospective study in France from January 2007 to date including patients with proven or probable *Candida* CNS infections, according to the 2008 EORTC/MSG classification, after the first 28 days of life. We reviewed clinical findings and performed a centralized analysis of imaging and pathology.

Results: We included 15 patients, 7 male, median age 50 years-old (6-75). Risk factors included neurosurgery (n=2), hematologic malignancy (acute leukemia or lymphoma) (n=6), gastrointestinal neoplasia (n=1), intravenous drug abuse (n=2), CARD9 deficiency (n=2) and diabete mellitus (n=2). Eight infections were secondary to fungemia, including 5 endocarditis. In case of endocarditis, others localisations were splenic abscess (n=3) and spondylodiscitis (n=1) and brain MRI revealed embolic lesions including microabscess (n=3) or hematoma (n=2). The three patients who developed fungemia associated with CNS infection without endocarditis had meningitis and/ or brain abscess. Predisposing conditions of candidemia complicated with CNS infections were hematologic malignancy (n=6), gastrointestinal neoplasia (n=1) or intravenous drug abuse (n=1). Five patients developed isolated CNS infection (without fungemia or neurosurgery) including 1 isolated meningitis, 1 brain macroabscess and 3 associated meningitis and abscess. For these patients, 2 had CARD9 deficiency, 1 was intravenous drug user and 2 had diabetes mellitus. Two others patients had post-neurosurgical brain abces. Three patients had multiple therapeutic lumbar punctures to treat their hematologic disease.

In addition to the 8 blood cultures, candida was isolated by brain biopsies (n=4) and / or lumbar punctions (n=6). β DGlucan CSF dosage was positive in 4/5 patients (390 pg/ml on average). Patients were treated with L-AMB (11), 5 FC (12), fluconazole (13) for a median duration of 101 days. Case fatality rate was 33%.

Conclusions: Only half of patients with CNS Candidiasis have documented fungemia, mostly associated with endocarditis. The most frequent predisposing factor is hematologic malignancies, always associated with fungemia. Diabetes melitus and CARD9 deficiency predispose to isolated CNS Candida infection. In addition with blood culture and CSF culture, β DGlucan in CSF can be helpful for diagnosis. Case fatality rate is 33% despite prolonged antifungal treatment.