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Paper Poster Session

Fungal infection epidemiology

Mucormycosis in immunocompromized and immunocompetent patients in Saint Petersburg, Russia

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Background: The aim of the study - to evaluate epidemiology, clinical characteristics and results of treatment of invasive mucormycosis in Saint Petersburg, Russia.

Material/methods: The prospective study during 2002-2014 yy. The diagnosis was made according to EORTC/MSG criteria (2008).

Results: We observed 70 patients with mucormycosis. The median age was 34 years (range 0,2-74), male/female – 1,2/1.

In 53 (75%) patients had EORTC/MSG risk factors. The median age was 27 y (range 4-74), male/female ratio 1,5:1. Main underlying diseases were hematological and oncological diseases – 87% (AML (37%), ALL (28%), CLL (7%), Hodgkin's Lymphoma (7%), no-Hodgkin's Lymphoma (4%), neuroblastoma (4%), aplastic anemia (2%), Fanconi's anemia (2%), MDS (2%), myeloid sarcoma (2%), CML (2%), and multiple myeloma (2%)). Other underlying diseases were COPD (5%), AIDS (2%), epidermolysis bullosa (2%), kidney transplantation (2%), congenital heart defect (2%). The median age of nonimmunocompromised patients (n=17) was 44 years (range 0,2-74 years), male and female ratio 1:1,5. Main underlying conditions were: chronic sinusitis (53%), diabetes mellitus (18%),

tuberculosis (12%), trauma (12%), RDC (6%). Diagnosis was established by histology and/or microscopy in all patients. In 66% vs 35% cases the diagnosis was confirmed by culture. Aetiologic agents included: *Rhizopus* spp. (31% vs 33%), *Lichtheimia corymbifera* (23% vs 17%), *Rhizomucor pusillus* (14% vs 0), *Rhizomucor* spp. (14% vs 0) *Rhizopus microsporus* (3% vs 0%), *Rhizopus oryzae* (3% vs 0), *Rhizopus microsporus var. oligosporus* (3% vs 0), *Rhizopus microsporus var. rhizopodiformis* (3% vs 0), *Rhizomucor variabilis* (0 vs 17%), *Mucor sp.* (6% vs 33%). Main clinical forms of were: pulmonary (77% vs 23%, p=0.0001), sinusitis (17% vs 65%, p=0,0002), gastrointestinal (4% vs 0), CNS (2% vs 11%), subcutaneous (2% vs 0%). Two and more organs were involved in 48% vs 6% patients (p=0.006). Antifungal therapy was performed in 72% (n=38) vs 58% (n=10) patients. Posaconazole was used in 67% vs 29% of patients, amphotericin B deoxycholate - 62% vs 47%, amphotericin B lipid complex - 46% vs 24%, caspofungin - 36% vs 0, liposomal amphotericin B – 3% vs 0. Combination antifungal therapy was used 60% vs 0 (p=0,0001). Surgery (sinusotomy, lobectomy, surgical debridement of skin and soft tissues) was performed in 41% vs 94% patients (p=0,0002). Twelve weeks overall survival was 43% vs 94% (p=0,002).

Conclusions:

Mucormycosis in immunocompromized and immunocompetent patients:

1. median of age - 27 y. and 44 y. (p=0,04)
2. main underlying conditions were acute leukemia (75%) vs chronic sinusitis (53%);
3. main pathogen were: *Rhizopus* spp. and *Lichtheimia corymbifera*;
4. combination antifungal therapy was usual used immunocompromised patients (60%), surgery - nonimmunocompromised patients (94%).
5. 12 weeks overall survival was 43% vs 94%.