Combination of invasive aspergillosis and mucormycosis in hematological patients: A prospective study results

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Invasive aspergillosis (IA) and mucormycosis are severe mycotic infections. In this prospective study during the period 2007–2017, 512 oncohematological patients with IA were included and 5% of them had a combination of IA with mucormycosis. Diagnosis of IA and mucormycosis was made according to EORTC/MSG criteria (2008). The median age of patients with IA and mucormycosis was 31 years (range 5–65), male and female ratio 2:1, adults: 83%. The main underlying conditions were: acute leukemia–64%, lymphoma–21%, chronic leukemia–6%; myelofibrosis, neuroblastoma and aplastic anemia–3% each. Aspergillus spp. was isolated from 51% of patients. The main agents of IA were A. fumigatus-55%, A. niger–17%, A. flavus–17%, and A. nidulans–11%. Test Platelia Aspergillus EIA (Bio-Rad) was positive in 62% of patients. Diagnosis of mucormycosis was confirmed by histology and direct microscopy of biopsy samples in all patients. Cultures of clinical materials were positive in 69% cases: Rhizopus spp. (45%), Lichtheimia corymbifera (20%), Rhizomucor spp. (10%), Rhizomucor pusillus (10%), Mucor sp. (10%), Rhizopus stolonifer (5%). The main sites of infection were lungs (76%), sinuses (17%), central nervous system (10%) and disseminated process was noted in 45% patients. Typical clinical feature of IA and mucormycosis combinations was hemoptysis (24%, p=0.008), CT-signs-lesions with cavities (38%), hydrothorax (29%), and a "reverse halo" symptom (17%). Antifungal therapy was used in 76% patients, surgical treatment–34% patients. Overall 12-weeks survival was 38%. An unfavorable prognosis factor was dissemination of mycotic infections (p=0.009). The main underlying disease in hematological patients with IA and mucormycosis was acute leukemia (64%). Twelve weeks overall survival was 38%. Disseminated mycosis was an unfavorable prognosis factor.

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