Mucormycosis in large cohort of pediatric and adult patients after hematopoietic stem cell transplantation (HSCT) & chemotherapy

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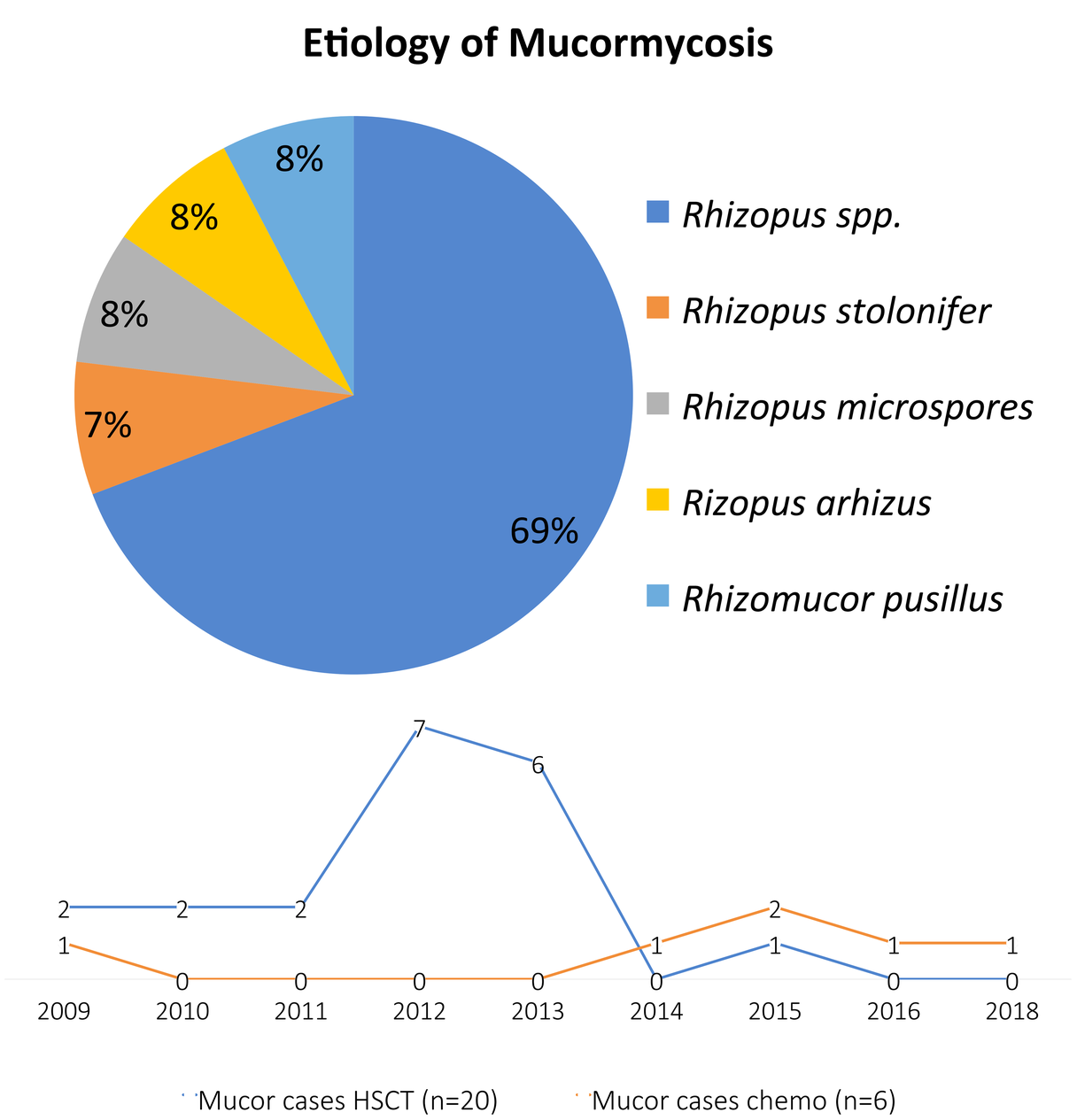
Background. The number of publications on mucormycosis in patients after HSCT or chemotherapy (CT) is limited.

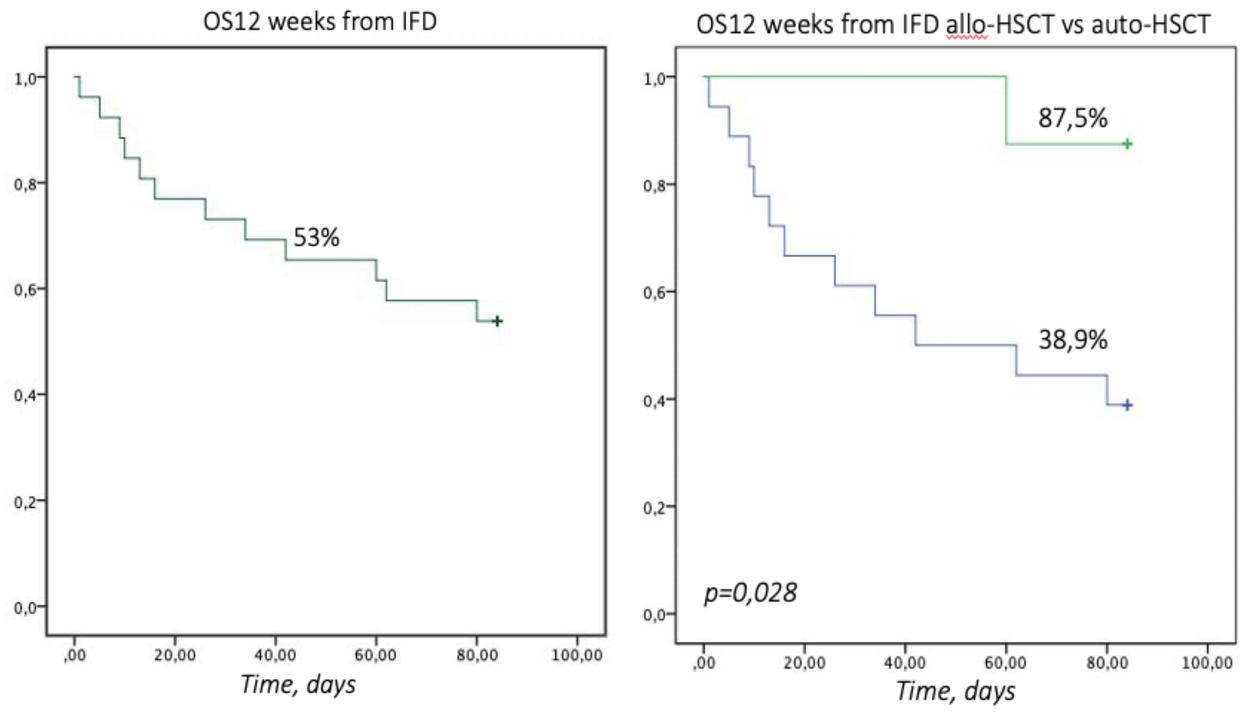
Patients and methods. The retrospective analysis of mucormycosis in large cohort of hematological patients after HSCT and chemotherapy for a 10-year period. During the observation period 26 probable and proven mucormycosis (EORTC/MSG 2008 criteria) cases were diagnosed in children and adults with hematological malignances and non-malignant hematological diseases after allo-HSCT (n=19), auto-HSCT (n=1), and chemotherapy (n=6). The median age was 24 (2-59) yo, males – 57% (n=15). The median follow up time for mucormycosis cases was 3 months; for survivors – 30 months.

Pic. 1



Results. The most frequent underlying diseases were acute myeloid leukemia (30%) and acute lymphoblastic leukemia (27%). The median time of onset of on mucormycosis after allo-HSCT was 104 (21-1057) days, auto-HSCT – 138 (60-216), after start of CT – 161 (79-189). Etiology of mucormycosis was identified by culture in 26% cases: *Rhizopus* spp. – 66,8%, *Rhizomucor pusillus* – 8,3%, *Rhizomucor stolonifera – 8,3%, Rhizomucor microspores – 8,3%*, *Rizopus arhizus* – 8,3% (pic.1). In 84,6% cases mucormycosis was diagnosed by microscopy or histology. In 61% cases mucormycosis developed after or in combination with invasive aspergillosis. The main sites of infection were lungs (88%), the main clinical symptom was febrile fever (95%). Antifungal therapy was used in all patients: lipid amphotericin B (31%), lipid amphotericin B + caspofungin – (38,4%), posaconazole (11,4%), lipid amphotericin B + posaconazole (7,7%), echinocandins (7,7%), and voriconazole (3,8%). Surgery was used in 10% patients. Overall survival at 12 weeks from the diagnosis of rare IFD was 53,8%. The 12-weeks overall survival was better in patients after CT and auto-HSCT (87,5%) than allo-HSCT (38,9%), p=0,028.

Pic.2



Conclusions. Mucormycosis is a late complication after chemotherapy and HSCT and usually develops after or in combination with invasive aspergillosis. Higher incidence and worst prognosis in patients with mucormycosis was observed in allo-HSCT recipients.

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9th Advances Against Aspergillosis and Mucormycosis
Palazzo dei Congressi Lugano, Lugano, Switzerland
27 – 29 February 2020

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