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Evolving therapeutic strategies for fungal infections

ANTI-MOULD PROPHYLAXIS IN PATIENTS WITH SUPERFICIAL FUSARIOSIS ON ADMISSION DOES NOT PREVENT INVASIVE FUSARIOSIS

A.G. Varon[1], M. Garnica[1], T. Akiti[2], G. Barreiros[2], B.M. Trope[3], S.A. Nouer[4], **M. Nucci**[1]

[1]Hematology, Univ Federal do Rio de Janeiro, Rio de Janeiro, Brazil ; [2]Mycology, Univ Federal do Rio de Janeiro, Rio de Janeiro, Brazil ; [3]Dermatology, Univ Federal do Rio de Janeiro, Rio de Janeiro, Brazil ; [4]Infection Control, Univ Federal do Rio de Janeiro, Rio de Janeiro, Brazil

Objective: Since 2007 we have experienced an increase in the incidence of invasive fusariosis with a cutaneous portal of entry. We previously showed that the presence of superficial skin lesions (onychomycosis or intertrigo) growing *Fusarium* spp. on admission was associated with the development of invasive fusariosis during neutropenia. The objective of this study was to evaluate if primary prophylaxis with a mould-active azole in such patients prevents the occurrence of invasive fusariosis.

Methods: Since August 2008, all patients admitted for hematopoietic cell transplantation (HCT) or induction remission of acute leukemia were submitted to a thorough skin examination on admission, with direct exam and culture of any skin lesion. Until November 2009, no anti-mould prophylaxis was given (cohort 1, n=61). Starting in December 2009, all patients with baseline skin lesions growing *Fusarium* spp. received voriconazole or posaconazole prophylaxis (cohort 2, n=148). We compared the characteristic and outcome of these two cohorts.

Results: The two cohorts were similar regarding age, gender and underlying diseases. Multiple myeloma (34%) and acute myeloid leukemia (25%) were the most frequent underlying diseases. There were more patients undergoing allogeneic HCT in cohort 1 (20% vs. 1%, p<0.001). Skin lesions on admission were present in 52% and 28% in cohorts 1 and 2, respectively (p=0.001), but the distribution of lesions was similar in the two cohorts, with ~50% of onychomycosis, ~30% of intertrigo, ~10% of a combination of the two, and ~10% other lesions. Direct exam of these lesions showed hyaline hyphae in 16 of 32 (50%) and 25 of 42 (59%) in cohorts 1 and 2, respectively (p=0.48). *Fusarium* spp. grew from 4 of the 32 cultures in cohort 1 and 6 of the 42 cultures in cohort 2 (p=1.0). Anti-mould prophylaxis was given to the 6 patients in cohort 2 who presented with superficial lesions at baseline growing *Fusarium* (posaconazole in 5, voriconazole in 1). Invasive fusariosis with baseline superficial fusariosis occurred in 2 of 4 patients in cohort 1 (no prophylaxis) and 2 of the 6 patients who received anti-mould prophylaxis in cohort 2. Overall, invasive fusariosis was diagnosed in 6 patients in cohort 1 (10%) and 7 (5%) in cohort 2 (p=0.21).

Conclusions: The strategy of giving anti-mould prophylaxis based on positive baseline skin lesions for *Fusarium* seems to have minimal impact in reducing the incidence of invasive fusariosis.