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Commentary

# Serious fungal diseases - a brief Brazilian view

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## Commentary

I read with special interest the epidemiological study performed by Klimko *et al.* with focus on local and invasive fungal infections [IFI] in Russian Federation [1]. Comments are herein done about the Russian recent article, in addition to three previous Brazilian reports of patients with aspergillosis, cryptococcosis, and mucormycosis [1-4]. Approximately 300 fungal species may cause human disease, and the most common have become significant causes of death, at least in part because they have been often neglected. Actually, the growing number of IFI with increased morbidity and mortality in medium and low income countries are due to underestimation by non-specialist health workers. Moreover, there is a relative lack of large population-based epidemiological studies [1]. Aspergillosis may affect up to 88% of people with hematological diseases [1], and begins as pulmonary invasion with further hematogenous systemic dissemination [2]. The majority of cases are related to hematological malignancies or organ transplants; and major risk factors are leucopenia, chemotherapy, and corticosteroid therapy [1,2]. Voriconazole and liposomal amphotericin B have been good options for treatment [2]. Cryptococcosis is the most common fatal fungal infection in the whole world; the major clinical manifestation is meningitis, and HIV infection remains the main risk factor [3]. Flucytosine is a better option than fluconazole plus amphotericin B deoxycholate for induction treatment, but moderate pulmonary infections respond well to fluconazole [3]. Mucormycosis is the second most frequent cause of IFI, even in immunocompetent individuals, and the main predisposing conditions are hematological malignancies, chemotherapy, corticosteroids, diabetes mellitus, trauma, and autoimmune disorders [4]. Disseminated infections usually origin from pulmonary involvement, and treatment options are liposomal amphotericin B, caspofungin, posaconazole, and deferasirox [4]. Unquestionably, the Russian study is useful to general practitioners and well presented. The prevalence per 100 000 inhabitants were - invasive aspergillosis: 2.27; cryptoccocal meningitis: 0.21; and mucormycosis: 0.16 [1]. The authors showed that severe fungal infections have occurred and further epidemiological researches should be done to yield more consistent basis to preventive measures [1]. Moreover, early diagnosis and prompt treatment of IFI will decrease the mortality rates. Although all three Brazilian patients were immunosuppressed, only two of them presented with IFI; moreover, the outcomes were good after anti-fungal administration. Disseminated aspergillosis associated with lung cancer and severe neutropenia, as well as disseminated mucormycosis associated with acute myeloid leukemia and severe neutropenia were controlled with success by administration of voriconazole [2], and by liposomal amphotericin B plus deferasirox and hyperbaric oxygen [4], respectively. Worthy of note, the unique unfavorable event was due to a widespread mycobacteriosis in a HIV patient with limited cryptococcal prostate infection disclosed in necropsy [3]. As a whole, the commented studies may contribute to enhance the awareness about currently neglected IFI, which are frequently associated with ominous outcome due to late diagnosis. They also should increase the suspicion index of non-specialist primary health workers.

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## Conflits of interest

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## References

1. Klimko N, Kozlova Y, Khostelidi S, Shadrivova O, Borzova Y, et al. (2015) The burden of serious fungal diseases in Russia. *Mycoses* 58 Suppl 5: 58-62. [Crossref]

2. Dos Santos VM, da Trindade MC, de Souza DW, de Menezes AI, Oguma PM, et al. (2013) A 76-year-old man with a right lung adenocarcinoma and invasive Aspergillosis. *Mycopathologia* 176: 113-118. [Crossref]

3. de Lima MA, dos Santos JAM, Lazo J, Silva-Vergara ML, dos Santos LAM, dos Santos VM (1997) [Cryptococcus infection limited to the prostate in an AIDS patient with disseminated mycobacteriosis. A necropsy report]. *Rev Soc Bras Med Trop* 30: 501-505. [Crossref]

4. Ribeiro EF, dos Santos VM, Paixão GT, Cruz LR, Danilow MZ, Campos VF (2013) Mucormycosis in a patient with acute myeloid leukemia successfully treated with liposomal amphotericin B associated with deferasirox and hyperbaric oxygen. *Mycopathologia* 175: 295-300. [Crossref]

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