

## Running Commentary on the Article: Burden of Serious Fungal Infections in Bangladesh Eur J Clin Microbiol Infect Dis 2017 DOI: 10.1007/s10096-017-2921-z

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### Article Info

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It is estimated that 250,000 cases of invasive aspergillosis, over 100,100,000 cases of fungal asthma 100,000 cases of disseminated histoplasmosis and 1,000,000 cases of mycotic keratitis occur every year globally<sup>1</sup>. Mortality due to fungal diseases estimated as >1.6 million is similar to that of tuberculosis and >3-fold more than malaria<sup>2</sup>. Fungal skin diseases constitute an important component of disability-adjusted life year (DALY), greater than viral skin diseases, acne vulgaris, alopecia areata, pruritus, urticaria, decubitus ulcer, malignant skin melanoma, and keratinocyte carcinoma<sup>3</sup>. Additionally, over one billion people are believed to suffer from a fungal infection annually, resulting in over 1.6 million deaths in patients who are immunocompromised, hospitalized with severe underlying diseases<sup>3</sup>. Currently, fungal diseases demand much greater attention than, ever before, because of the increasing population of immunocompromised patients who are greater risk of acquiring these diseases<sup>4</sup>.

A recently published article "Burden of serious fungal infections in Bangladesh" on which this running commentary is based constitutes the first attempt to estimate the burden of several types of serious fungal infections in Bangladesh. The study shows that superficial mycoses including those attributable to dermatophytes are very common in urban and rural areas of Bangladesh constituting an important health problem, with *Trichophyton rubrum* as the predominant etiological agent (80.6%). Mycotic keratitis appears to be very common in Bangladesh, as evidenced by the report of numerous cases of mycotic corneal ulcers reported from several parts of the country constituting 25-84% of suppurative keratitis. The total annual incidence of mycotic keratitis in three of the studies was 140 cases (32.9%) out of 425 corneal ulcers examined. The predominant fungal agents in these studies were *Aspergillus* (mainly *A. fumigatus*, *A. flavus*) and *Fusarium solani*. Community-based surveys in representative areas in different parts of Bangladesh are called for to get a correct estimate of the prevalence of mycotic corneal ulcers and its impact on blindness in the country. *Candida* bloodstream infection was estimated based on a 5 per 100,000 rates (8100 cases) and invasive aspergillosis based primarily on leukemia and Chronic obstructive pulmonary disease COPD rates, at 5166 cases with HIV infection. These estimates were made by linear modelling based on predisposing conditions for the stated fungal infections as per the LIFE program<sup>5</sup>. Histoplasmosis was documented in 16 autochthonous cases with disseminated disease with some of them

mimicking tuberculosis. The clinico-pathological features of these cases and four additional cases of the disease are reviewed in subsequent publication<sup>6</sup>. This provides strong evidence of endemicity of histoplasmosis in Bangladesh. Endemicity of the disease should be further established by exploring natural habitats of the causal agent, *Histoplasma capsulatum* var. *capsulatum* employing conventional and molecular techniques.

It may be worth mentioning here that earlier the author of this commentary in collaboration with a British colleague published articles on estimates of burden of fungal infections in three Caribbean countries, viz. Jamaica, Trinidad & Tobago, Dominican Republic<sup>7,8,9</sup>. Further Gaffi-Global Action Fund for Fungal Infections has estimated the burden of serious fungal infections in numerous countries across different continents and increased the awareness of the global problem of fungal diseases and its magnitude<sup>10</sup>, constituting a major health problem world-wide<sup>11,12</sup>.

In conclusion it can be emphasized that concerted and sustained efforts with international collaboration should be made to provide basic laboratory facilities for diagnosis of fungal infections in all medical centers and hospitals. This would help in making accurate estimates of the burden of fungal infections in different countries. Educational efforts for creating awareness of fungal infections and modes of their prevention are called for to reduce their burden. International funding should be solicited to provide antifungal drugs at low cost in developing countries.

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