

The Lancet Infectious Diseases

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--Manuscript Draft--

Manuscript Number:	
Article Type:	Correspondence
Keywords:	
Corresponding Author:	Spinello Antinori, M.D. University of Milano Milano, ITALY
First Author:	Spinello Antinori, M.D.
Order of Authors:	Spinello Antinori, M.D. Anna Lisa Ridolfo Giacomo Casalini Andrea Giacomelli
Manuscript Region of Origin:	ITALY

Endemic mycoses: geographical distribution is still a work in progress

Spinello Antinori^{1,2}, Anna Lisa Ridolfo², Giacomo Casalini^{1,2}, Andrea Giacomelli²

¹ Luigi Sacco Department of Biomedical and Clinical Sciences, Università degli Studi di Milano, Milan, Italy.

² III Division of Infectious Diseases, ASST Fatebenefratelli-Sacco, Luigi Sacco University Hospital, Milan, Italy.

Correspondence to:

Prof Spinello Antinori

Dipartimento di Scienze Biomediche e Cliniche “Luigi Sacco”

Università degli Studi di Milano, Italy

Tel: +390250319765

Fax : +390250319758

e-mail: spinello.antinori@unimi.it

We read with great interest the recently published “Global guideline for the diagnosis and management of endemic mycoses: an initiative of the European Confederation of Medical Mycology in cooperation with the International Society for Human and Animal Mycology”, and would like to congratulate the authors on their effort to re-draw the maps of such important pathogens. However, we think that there are some aspects of the geographical distribution of endemic mycoses that are not mentioned in the maps but deserve some consideration.

Firstly, we note that only the north-eastern part of India (the state of Manipur) is indicated as being endemic for talaromycosis, but a recent paper has suggested that the states of Assam and Sikkim should also be included among the areas of endemicity.¹ Moreover, although Australia is correctly indicated as a region of imported or travel-associated cases of talaromycosis, no mention is made of Europe where most of the imported cases of talaromycosis have been described.²

Secondly, to the best of our knowledge, case reports of histoplasmosis are not limited to the northern and north-eastern states of India, where the three major rivers (Ganges, Yamuna and Brahmaputra) are located, because cases have also been reported in some of the states of southern India.³ Moreover, as far as Europe is concerned, the authors cite a study of 118 cases of histoplasmosis (including some autochthonous cases in Germany, Italy and Turkey) that was published in 2008, but a more recent systematic review of 728 cases diagnosed in Europe between 2005 and 2020, suggests that only Italy should be actually considered of low endemicity, with autochthonous cases occurring in both humans and animals.⁴ Furthermore, although the Democratic Republic of Congo is highly endemic for *Histoplasma duboisii*,^{4,5} it should not be forgotten that the lack of high-quality diagnostic methods greatly limits the mapping of the real prevalence of *H. capsulatum* and *H. duboisii* infections in African countries.

In conclusion, estimating the global geographical distribution of endemic mycoses is challenging and should still be considered a work in progress.

References

1. Sethuram N, Thirunarayan MA, Gopalakrishnan R, Rudramurthy S, Ramasubramanian V, Parameswaran A. *Taloromyces marneffe* outside endemic areas in India: an emerging infection with atypical clinical presentations and review of published reports from India. *Mycopathologia* 2020;185:893-904.
2. Antinori S, Gianelli E, Bonaccorso C, Ridolfo AL, Croce F, Sollima S, Parravicini C. Disseminated *Penicillium marneffe* in an HIV-positive Italian patient and a review of cases reported outside endemic regions. *J Travel Med* 2006;13:181-8.
3. Mahajan VK, Raina RK, Singh S, Rashpa RS, Sood A, Chauhan PS, et al. Case report: Histoplasmosis in Himachal Pradesh (India): an emerging endemic focus. *Am J Trop Med Hyg* 2017;97:1749-1758.
4. Antinori S, Giacomelli A, Corbellino M, Torre A, Schiuma M, Casalini G, et al. Histoplasmosis diagnosed in Europe and Israel: a case report and systematic review of the literature from 2005 to 2020. *J Fungi* 2021;7:481.
5. Develoux M, Amona FM, Hennequin C. Histoplasmosis caused by *Histoplasma capsulatum* var. *duboisii*: a comprehensive review of cases from 1993 to 2019. *Clin Infect Dis* 2021;73:e543-9.

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Annalisa Ridolfo, write the draft
Giacomo Casalini, write the draft
Andrea Giacomelli, write the draft

Role of the funding source

Please disclose any funding sources and their role, if any, in the writing of the manuscript or the decision to submit it for publication. Examples of involvement include: data collection, analysis, or interpretation; trial design; patient recruitment; or any aspect pertinent to the study. Please also comment whether you have been paid to write this article by a pharmaceutical company or other agency. The information provided here must match the role of the funding source statement in the manuscript. If you are the corresponding author, please state that authors were not precluded from accessing data in the study, and they accept responsibility to submit for publication.

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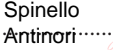
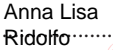
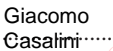
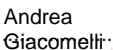
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