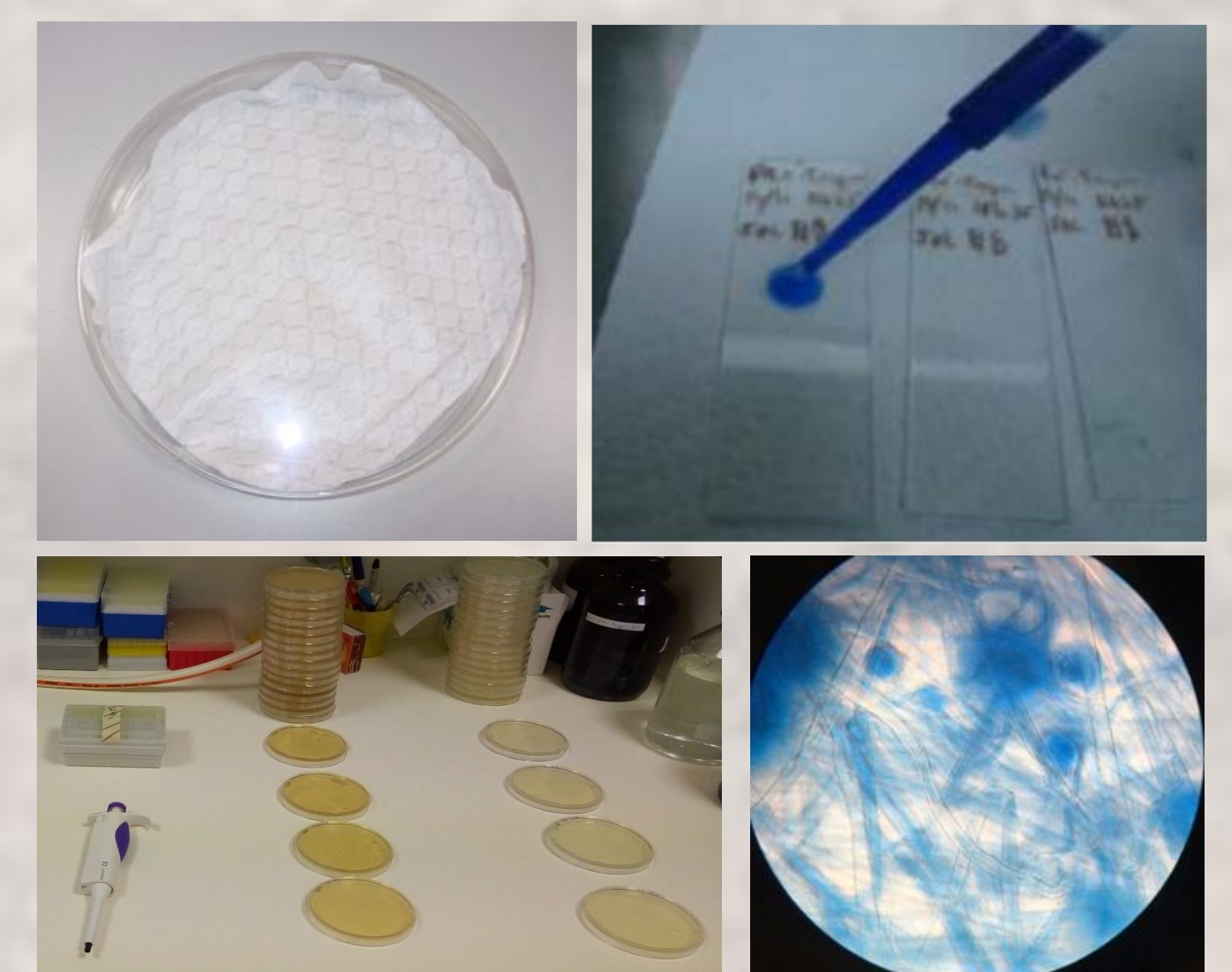


Introduction

The indoor environment is a source of bioburden associated with serious health effects. The emergence of fungal resistance to antifungals is a problem in the management of fungal diseases, being a major concern for *Candida* sp., *Aspergillus* sp., and Mucorales order.¹⁻³ This study determines the prevalence of azole resistant bioburden in Portuguese dwellings through passive sampling methods and screening in azole-supplemented media.

Methodology

- I. Electrostatic dust cloth (EDC) was used to collect dust for 30 days at:
 - 9 dwellings in Lisbon (bedroom and living room)
 - 23 dwellings in Aveiro (bedroom, kitchen and living room) (summer season)
- II. Screening of azole resistance on sabouraud media supplemented with either:
 - 4 mg/L itraconazole (ITC)
 - 1 mg/L voriconazole (VCZ)
 - 0.5 mg/L posaconazole (PCZ)



Results and discussion

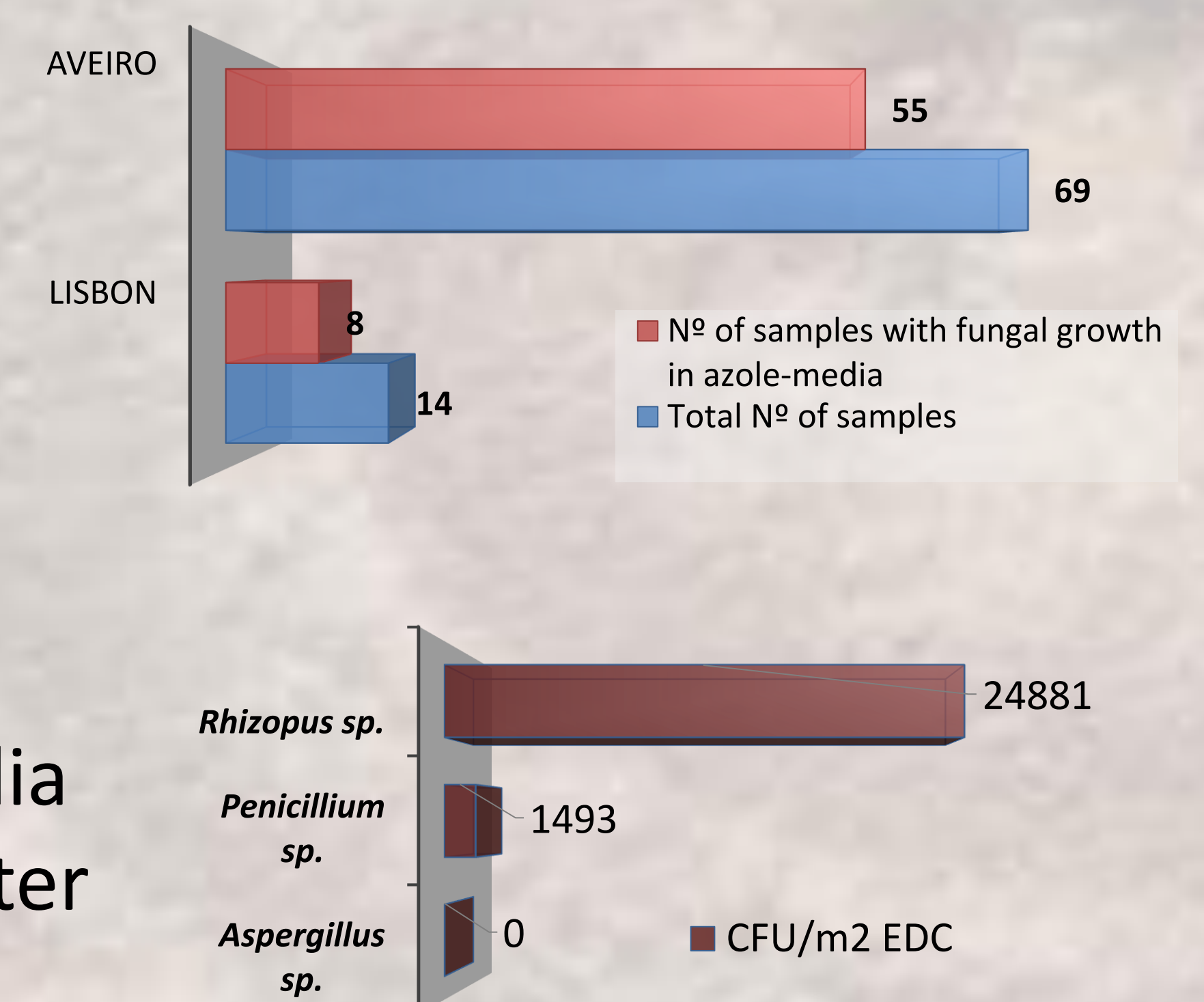
Fungal growth in azole-media (1 to 24,881 CFU/m²) was observed in:

- 57% samples from 5 dwellings in Lisbon
- 80% samples from dwellings in Aveiro

In the larger survey (23 Aveiro dwellings, summer season):

- *Penicillium* sp. load ranged from 1 to 1,493 CFU/m² in the three azole-media (ITC, VCZ and PCZ)
- *Rhizopus* sp. load ranged from 1 to 24,881 CFU/m² in ITC and in VCZ media
- No *Aspergillus* sp. was observed in azole-media in summer season (winter results are being processed)

Results suggest a multi-azole resistant phenotype.



Conclusions

- EDC sampling method is suitable for the assessment of azole-resistance indoors.⁴
- The detection in dwellings of fungal species able to grow in azole-supplemented media rises concern regarding potential health risks for inhabitants, specially for high-risk subpopulations, such as immunocompromised individuals and other susceptible populations.³
- Screening of azole-resistance should be adopted as a protocol in exposure assessments at homes of immunocompromised individuals. Further molecular studies are necessary to fully characterize azole-resistance.^{5,6}

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