

The Lebanese LSICDM

Correlation between antifungal consumption and distribution of *Candida* spp. in different departments of a Lebanese hospital

Lyn Awad¹; Hani Tamim², Ahmad Ibrahim³, Dania Abdallah¹, Mohammad Salameh⁴, Anas Mugharbil³, Tamima Jisr⁵, Nabila Droubi¹, Kamal Zahran⁶, Rima Moghnieh⁷

¹ Pharmacy Department, Makassed General Hospital, Beirut, Lebanon

² Department of Internal Medicine, American University of Beirut, Beirut, Lebanon

³ Division of Hematology/Oncology, Department of Internal Medicine, Makassed General Hospital, Beirut, Lebanon

⁴ Department of Internal Medicine, Makassed General Hospital, Beirut, Lebanon

⁵ Department of Laboratory Medicine, Makassed General Hospital, Beirut, Lebanon

⁶ Middle East Institute of Health, Bsalim, Lebanon

⁷ Makassed General Hospital, Beirut, Lebanon

Abstract

Introduction: Recently there has been a significant increase in the incidence of fungal infections attributed to *Candida* species worldwide, with a major shift toward non-*albicans* *Candida* (NAC). Herein, we described the distribution of *Candida* species among different departments in a Lebanese hospital and calculated the antifungal consumption in this facility. We, then, correlated the consumption of antifungals and the prevalence of *Candida* species.

Methodology: This was a retrospective study of *Candida* isolates recovered from the hospital microbiology laboratory database between 2010 and 2015. Data on antifungal consumption between 2008 and 2015 were extracted from the hospital pharmacy database. Spearman's coefficient was employed to find a correlation between *Candida* species distribution and antifungal consumption.

Results: The highest antifungal consumption was seen in the haematology/oncology department (days of therapy/1000 patient days = 348.12 ± 85.41), and the lowest in the obstetrics department (1.36 ± 0.47). The difference in antifungal consumption among various departments was statistically significant ($p < 0.0001$). Azoles were the most common first-line antifungals. A non-homologous distribution of *albicans* vs. non-*albicans* was noted among different departments ($p = 0.02$). The most commonly isolated NAC was *Candida glabrata*, representing 14% of total isolates and 59% of NAC. The total antifungal consumption correlated positively with the emergence of NAC. The use of azoles correlated positively with *Candida glabrata*, while amphotericin B formulations correlated negatively with it. None of these correlations reached statistical significance.

Conclusion: Different *Candida* species were unequally distributed among different hospital departments, and this correlated with consumption of antifungals in respective departments, highlighting the need for antifungal stewardship.

Key words: antifungal; *Candida* species; consumption; critical care; obstetrics; oncology.

J Infect Dev Ctries 2018; 12(2S):33S. doi:10.3855/jidc.10105

(Received 23 December 2017 – Accepted 27 December 2017)

Copyright © 2018 Awad *et al.* This is an open-access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Corresponding author

Rima Moghnieh

Head of Antimicrobial Stewardship Program,

Makassed General Hospital,

Tarik Al Jadida, Beirut,

PO Box 11-6301, Riad El-Solh, Beirut 1107 2210, Lebanon

Phone: +961 3 829 363

Email: moghniehrima@gmail.com

Conflict of interests: No conflict of interests is declared.