Prescribing Pattern of Antifungal Agents in 18 Brazilian Hospitals: a Point Prevalence Survey

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INTRODUCTION AND PURPOSE

A major concern and global challenge is the inappropriate use of antibiotics, which leads to the increased rates of antimicrobial resistance, which in turn has been associated with increased morbidity, mortality and health care costs. Although information about antimicrobial consumption, including antifungal agents, are essential to guide antimicrobial stewardship interventions, there is a lack of data regarding antifungal consumption. The aim of this study was to evaluate the antifungal prescriptions, using the Global Point Prevalence Survey of Antimicrobial Consumption and Resistance (2017 Global-PPS) data (www.global-pps.com).

METHODS

A web-based tool for standardized surveillance of antimicrobial prescribing was used to assess the variation in antifungal use in 18 Brazilian hospitals. The study included all inpatients on antimicrobials on the day of the point prevalence survey. Data collection included information about antifungal prescriptions, such as classes, dose, route, as well as diagnosis/indication and a set of quality indicators. The Global PPS was supported by the University of Antwerp and BioMérieux.

RESULTS

18 hospitals located in six states from three Brazilian regions participated to the survey. (figure 1). Most hospitals have 100 – 499 beds, are private (11/18), tertiary (15/18) and non-teaching (11/18). A total of 1801 patients were evaluated, of which 941 (52.2%) were on antimicrobials (1492 antimicrobials). 82 out of 1801 evaluated patients were on antifungals, which means an overall prevalence of antifungal use (AU) of 4.5%. Three patients were receiving two antifungal agents. Half of the patients was admitted to intensive care units and almost 25% to hematology/oncology units.
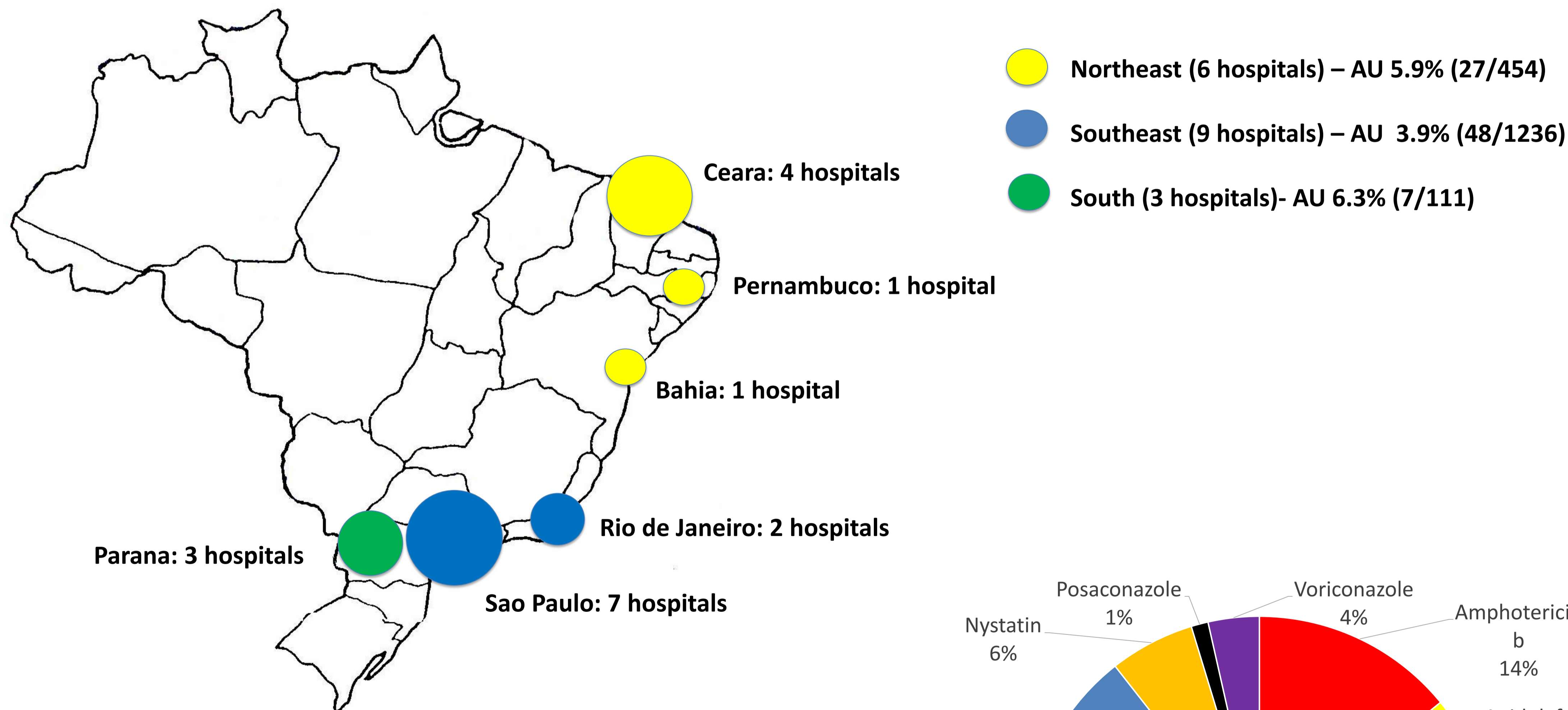

Northeast (6 hospitals) – AU 5.9% (27/454)
Southeast (9 hospitals) – AU 3.9% (48/1236)
South (3 hospitals)- AU 6.3% (7/111)

Ceara: 4 hospitals
Pernambuco: 1 hospital
Bahia: 1 hospital
Parana: 3 hospitals
Rio de Janeiro: 2 hospitals
Sao Paulo: 7 hospitals

Figure 1: 18 participating Brazilian hospitals in Global PPS 2017

Figure 2: Prescribed antifungals in 18 Brazilian hospitals, 2017 (%)

The most frequent antifungal prescribed was fluconazole (60%), followed by amphotericin B (14%), and micafungin (12%) (figure 2). 48.2% of the antifungals were prescribed for treatment of healthcare-associated infections, 23.1% for community-acquired infections, and 23.5% for prophylaxis. Fluconazole was also the most frequent drug prescribed for prophylaxis (16 out of 20).
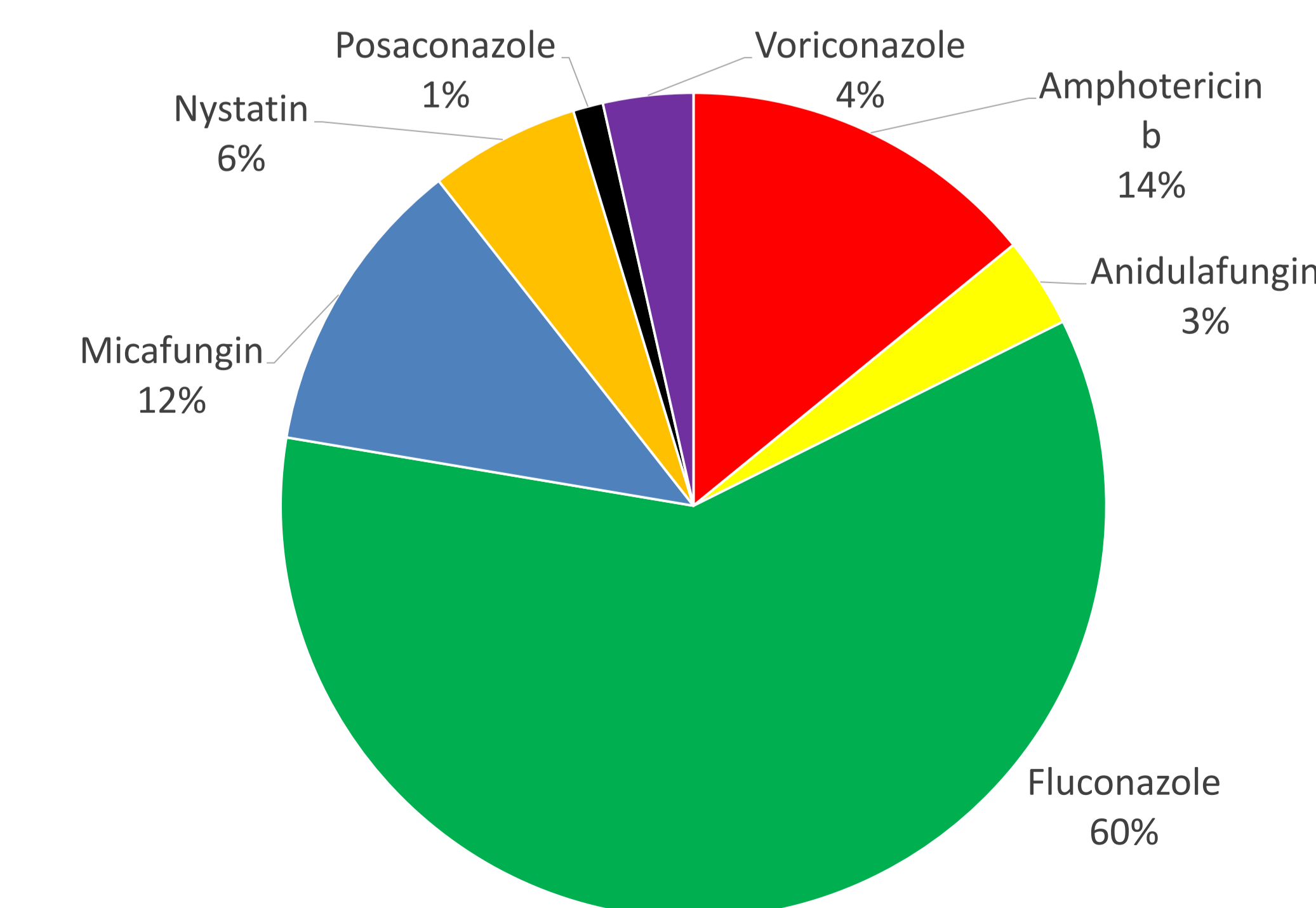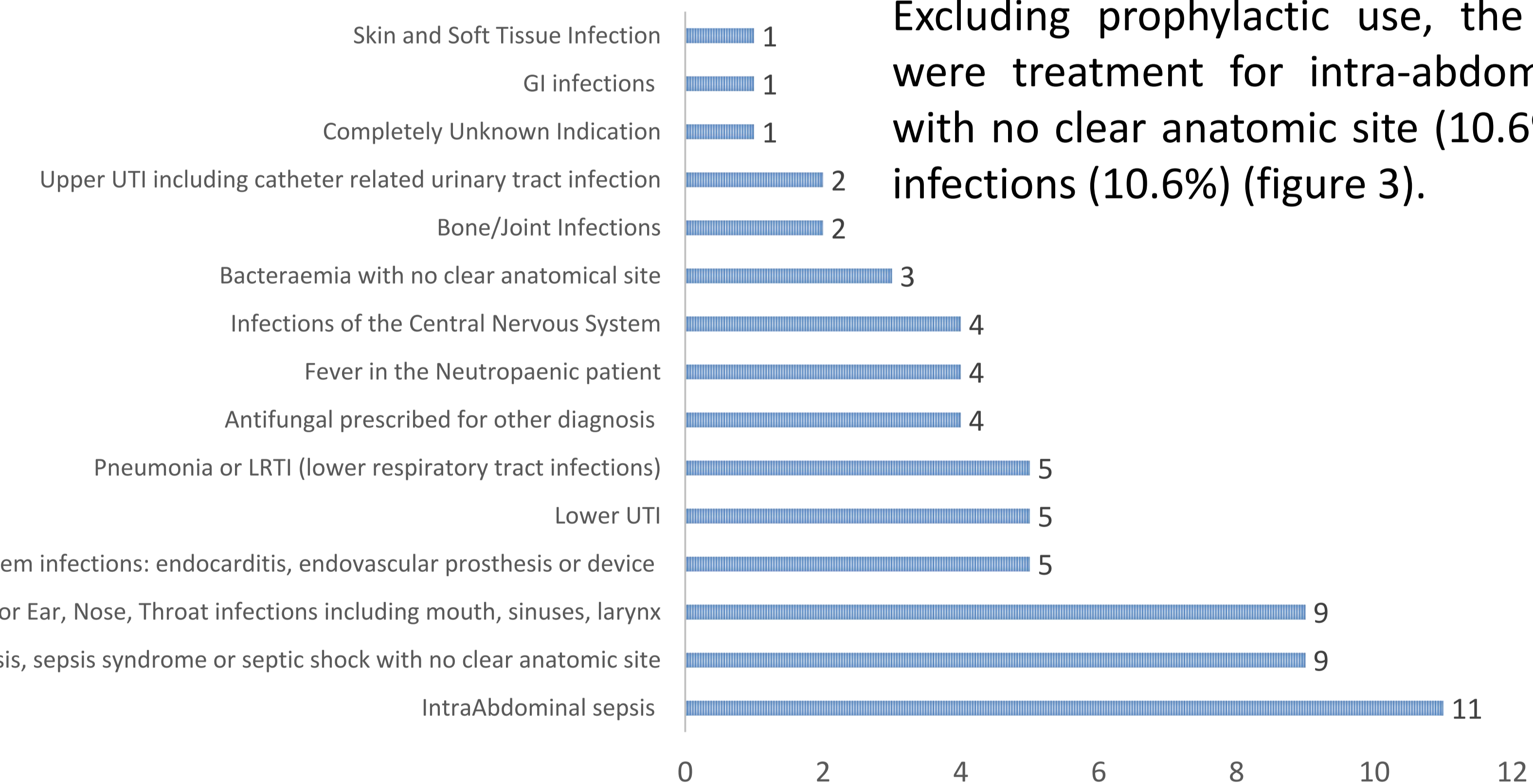

Figure 3: indications for antifungal therapy in 18 Brazilian hospitals, 2017 (N)

Excluding prophylactic use, the most common indications were treatment for intra-abdominal sepsis (12.6%), sepsis with no clear anatomic site (10.6%) and ear, nose and throat infections (10.6%) (figure 3).

Guideline compliance, empiric use and biomarker use were observed respectively in 84.7%, 68.2%, and 18.8% of the prescriptions (table 1).

Route of administration	Based on microbiologic data	Biomarker use	Guideline compliance	Stop / review documented	Reason in notes
Oral: 21 (24.7)	Empiric: 58 (68.2)	Yes: 16 (18.8)	Yes: 72 (84.7)	Yes: 52 (61.2)	Yes: 72 (84.7)
Parenteral: 66 (75.3)	Targeted: 27 (31.8)	No: 69 (81.2)	No: 13 (15.3)	No: 33 (38.8)	No: 13 (15.3)

Table 1: Set of quality indicators of antifungal prescribing pattern in 18 Brazilian hospitals, 2017 – N (%)

CONCLUSION

The antifungal use prevalence (4.5%) was similar to some European surveys[1]. As expected, fluconazole was the most frequent prescribed agent. Although the compliance to guidelines was high, there was predominance of empirical use and lack of biomarkers to guide the antifungal use in these Brazilian hospitals. Further investigation is necessary to better assess the frequent indication for sepsis.

[1] Yusuf E., Versporten A and Goossens H. J Antimicrob Chemother 2017; 72: 2906-2909