

A Multicenter Pharmacoepidemiologic Evaluation of Echinocandin Use

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INTRODUCTION

- Invasive candidiasis (IC) carries a large economic burden in the global healthcare system; candidemia is reported to have the attributable cost of ~US\$40,000 per patient¹
- Although *Candida albicans* continue to be the most prevalent species, both drug-resistant *Candida* spp. and *C. auris* have emerged and been designated by the CDC as serious and urgent threats, respectively²
- Echinocandins are currently recommended as empiric and/or initial therapy for IC due to their activity against most *Candida* species and favorable toxicity profile. Key challenges to managing IC involve rapid initiation of appropriate antifungal therapy and appropriate de-escalation based on microbiological data³
- However, real-world data on echinocandin therapy, including indication, duration, and appropriate de-escalation are lacking

AIM

- To perform a pharmacoepidemiologic analysis on the current echinocandin use at two large healthcare systems in Houston, Texas, United States
- To assess antifungal stewardship including indication, duration of therapy, discharge disposition on the day of hospital discharge

METHOD

- Pharmacy administration and clinical microbiologic data for patients hospitalized between 2017-19 at CHI/Baylor St. Luke's Medical Center and Memorial Hermann Hospitals in Houston, Texas were screened for echinocandin use and positive *Candida* culture results
- Total and monthly days of therapy (DOT) per 1,000 patient days were calculated and the proportion of echinocandin-treated patients with or without positive *Candida* cultures were investigated
- Antifungal stewardship, including clinical indications, duration of therapy, de-escalation, and discharge disposition were assessed

RESULTS

Table 1. Echinocandin courses and patients evaluated

Number of unique patients evaluated	1,665
Total number of days of therapy	7,820
Number of patients with positive <i>Candida</i> microbiologic cultures	842 (51%)
Days of echinocandin therapy with or without positive <i>Candida</i> culture	5.5 ± 5.9 vs. 3.9 ± 5.0 (p<0.001)
Number of patients evaluated for echinocandin therapy	635

Figure 1. Echinocandin DOT per 1,000 patient days (2017-2019)

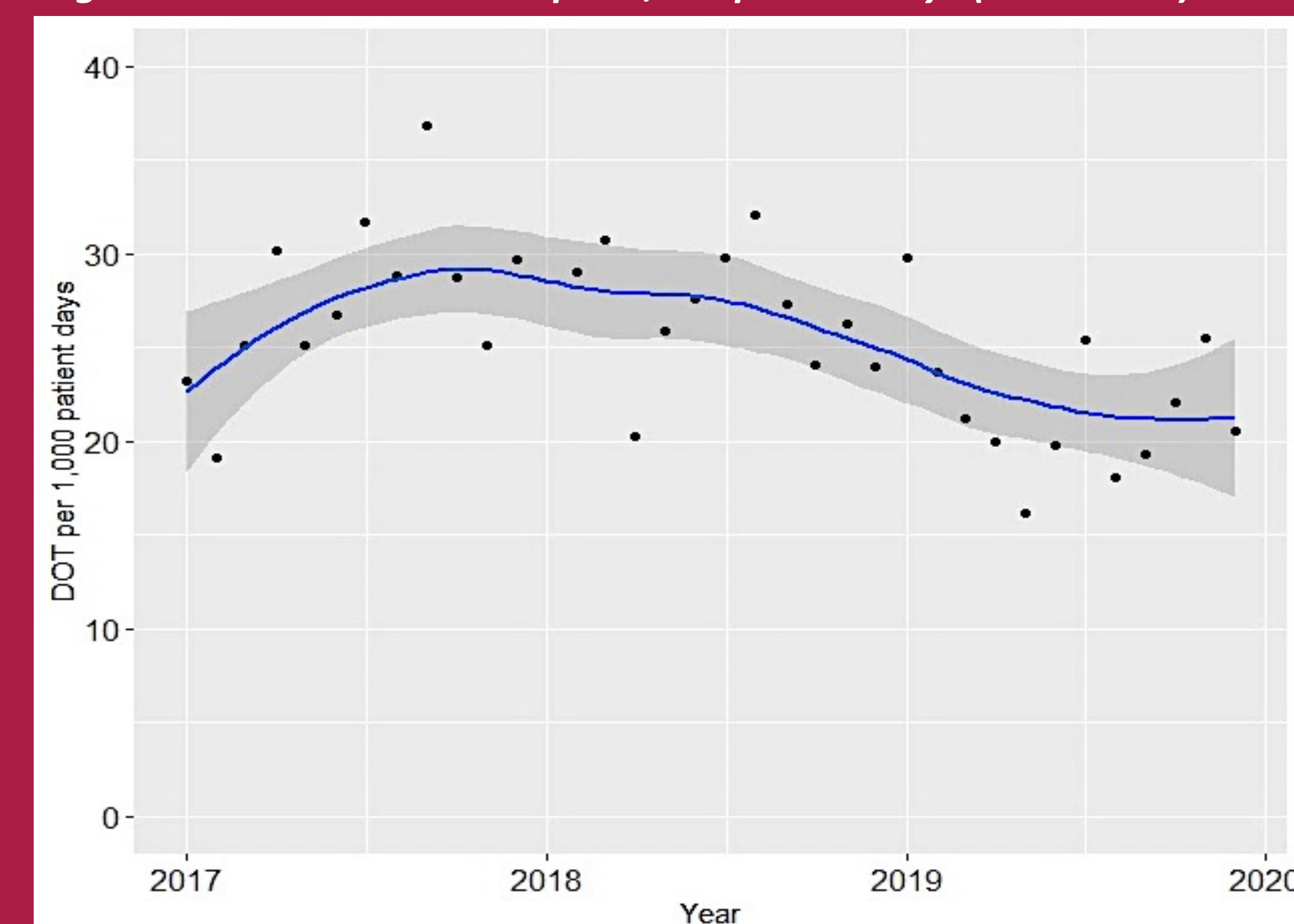


Figure 2. Echinocandin discharge disposition

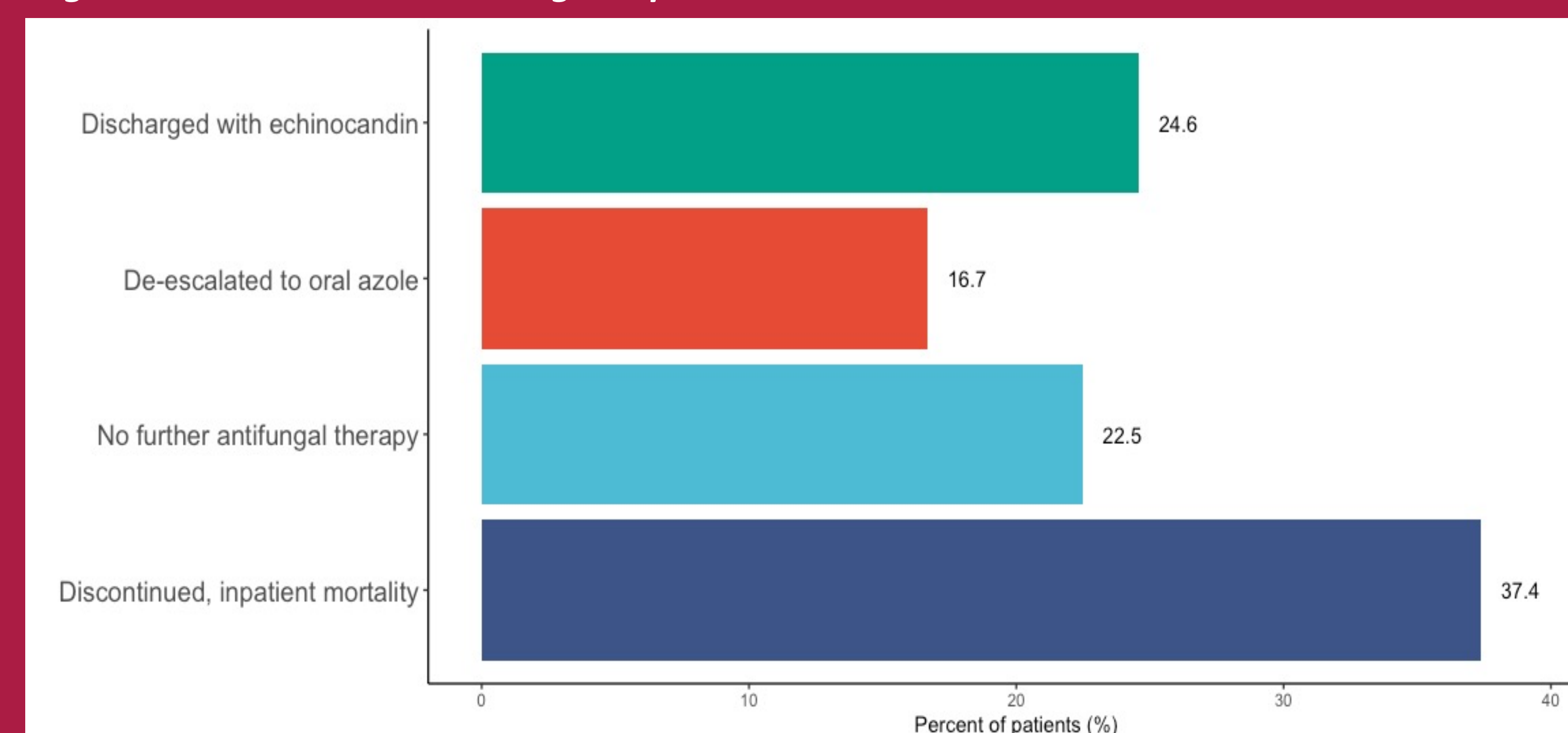


Figure 3. Echinocandin discharge disposition based on indication

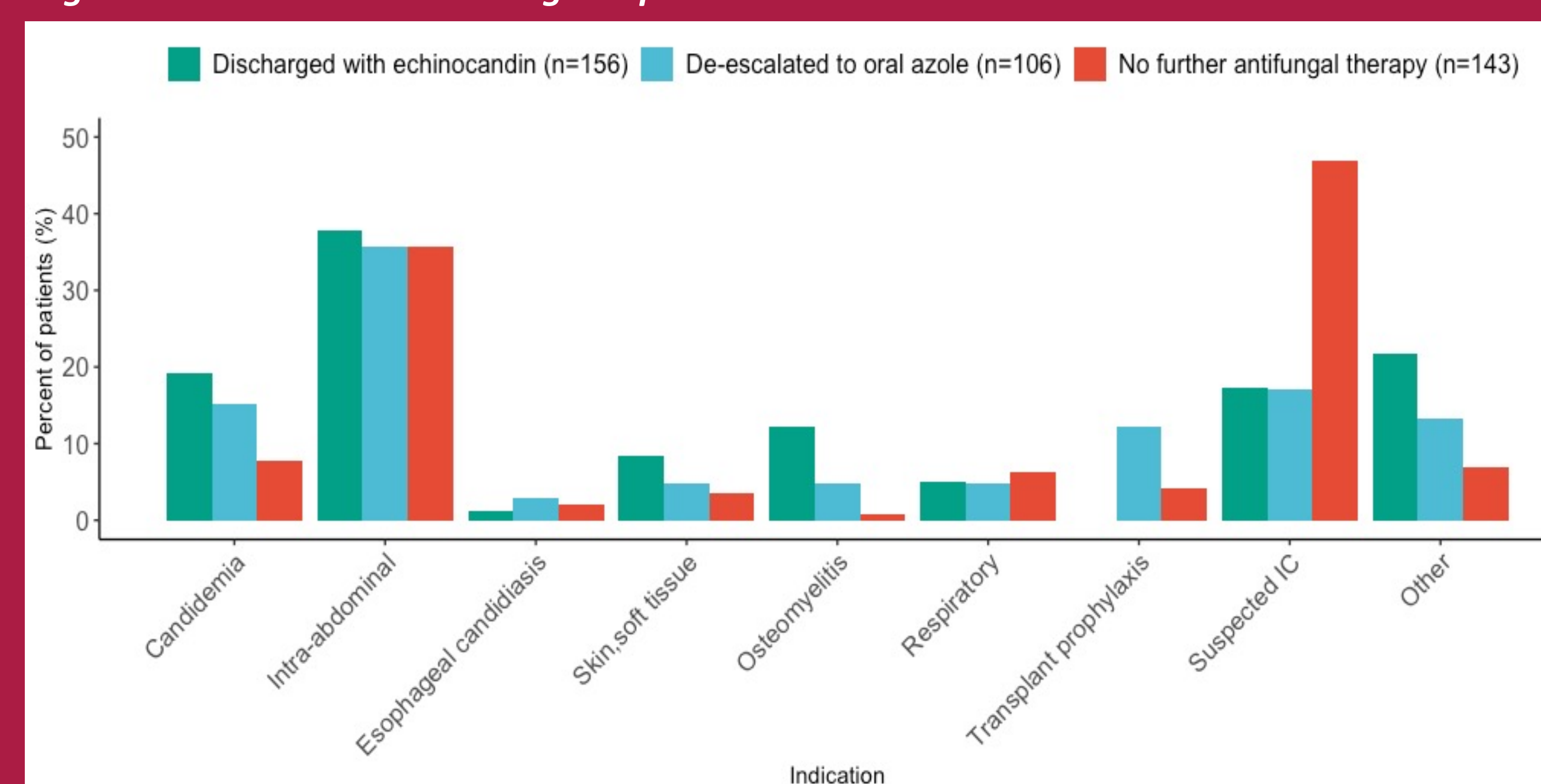


Figure 4. Inpatient and outpatient echinocandin DOT (n=136)

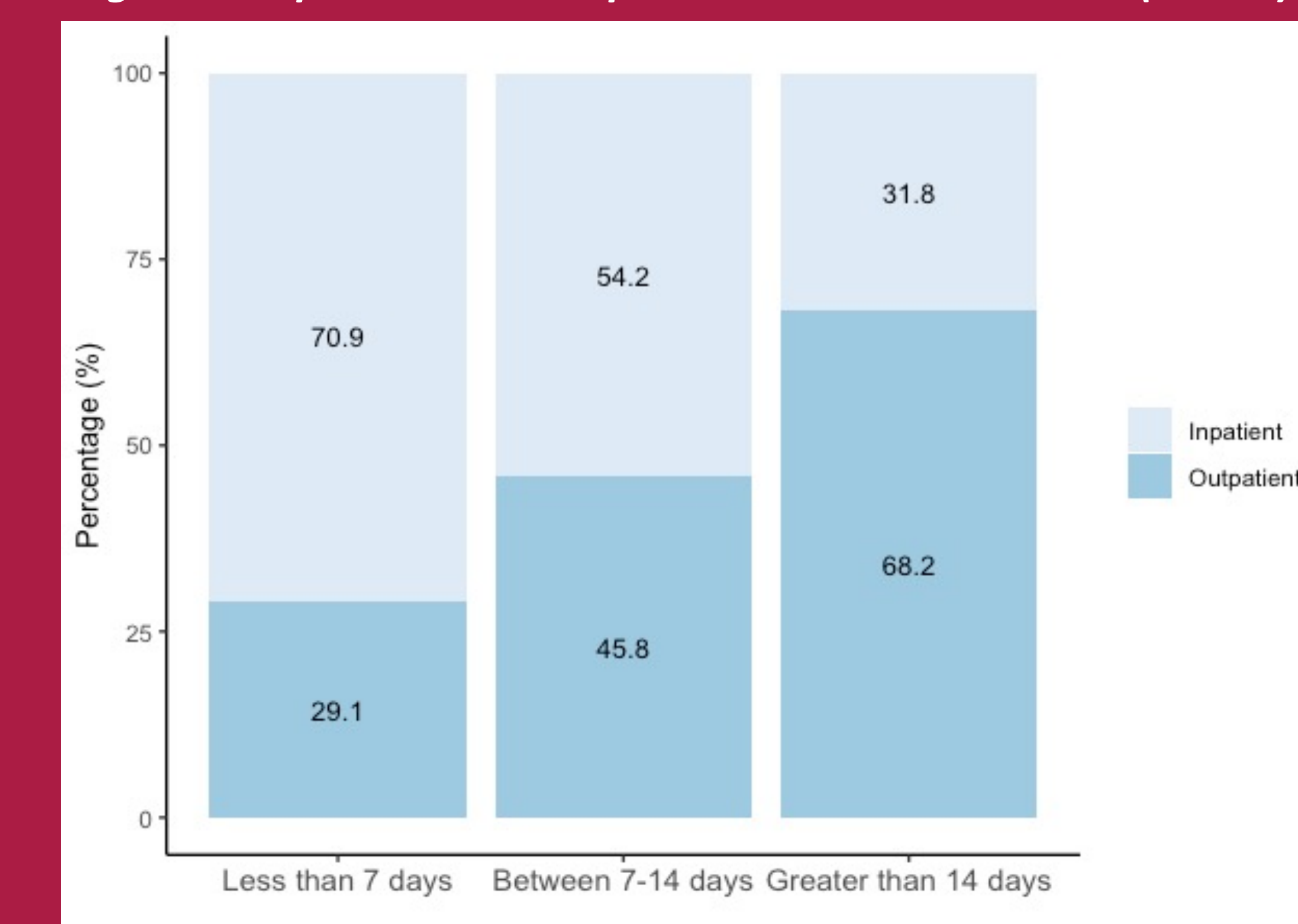
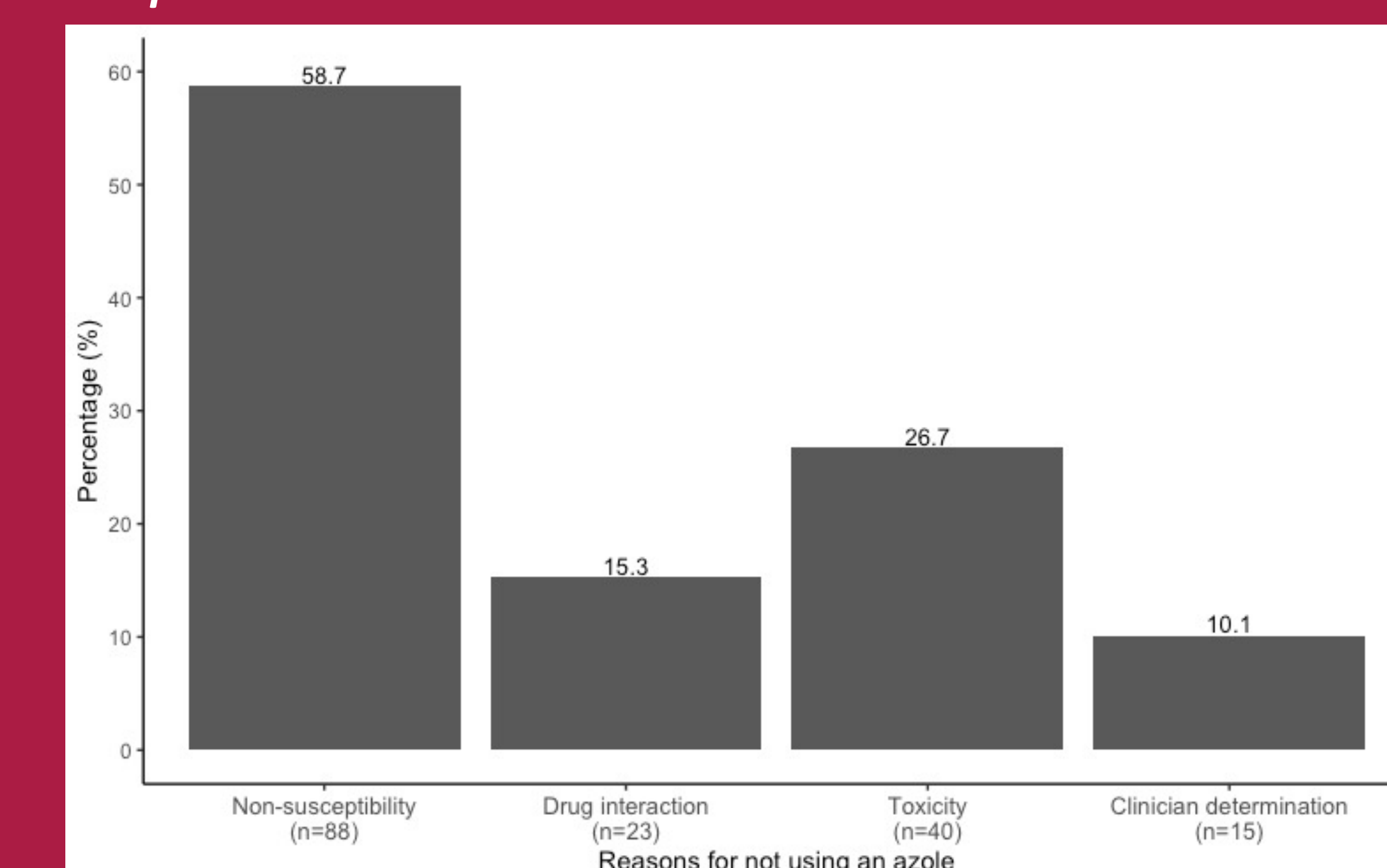


Figure 5. Antifungal stewardship assessment of using outpatient echinocandin versus an azole



CONCLUSIONS

- The rate of echinocandin use did not change appreciably during the 2-year study period. Initiation of echinocandin therapy occurred throughout the hospitalization time-period
- A significant proportion of echinocandin courses were continued after discharge and was more common in patients with intra-abdominal related infection and candidemia
- Azole non-susceptible *Candida*, azole-related toxicity and drug interactions were common reasons for outpatient echinocandin use
- Further studies evaluating potential benefits of long-acting echinocandins in these types of patients with an emphasis on transition of care are warranted

REFERENCES

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ACKNOWLEDGEMENTS

This study was funded by Cidara Therapeutics

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