



# Antifungal Therapy in *Candida* Intra-Abdominal Infections Following Source Control

Margaret Buck, PharmD; Dustin Carr, PharmD, BCPS, BCIDP; Daniel Jenniches, PharmD, BCCCP; James Babowice, DO; Eunice Chung, MD; Derek Bremmer, PharmD, BCIDP  
Allegheny General Hospital

## Background

- Current literature suggests that many patients with *Candida* isolated from an intra-abdominal source do not develop systemic infections
- Recent literature found similar incidence of treatment failure between patients appropriately treated for *Enterococcus* intra-abdominal infections compared to patients without *Enterococcus* coverage following source control
- *Enterococcus* and *Candida* are both low-virulent microorganisms, questioning the necessity of antifungal therapy for *Candida* intra-abdominal infections

## Methods

- Retrospective cohort study utilizing electronic health record review from January 2016 – October 2021

## Inclusion Criteria

- Patients with intra-abdominal fungal cultures growing *Candida* following an intervention with definitive source control, per surgeon's review

Antifungal Group: 3+ days of antifungals

Non- Antifungal Group: ≤ 24 hours of antifungals

## Exclusion Criteria

- Systemic antifungals prior to admission, and candidemia prior to surgical intervention

## Objectives

### Primary Outcome

- Treatment failure at 30 days post surgical intervention
- Composite of death, additional unplanned surgical and/or antimicrobial interventions for the original intra-abdominal infection

### Secondary Outcomes

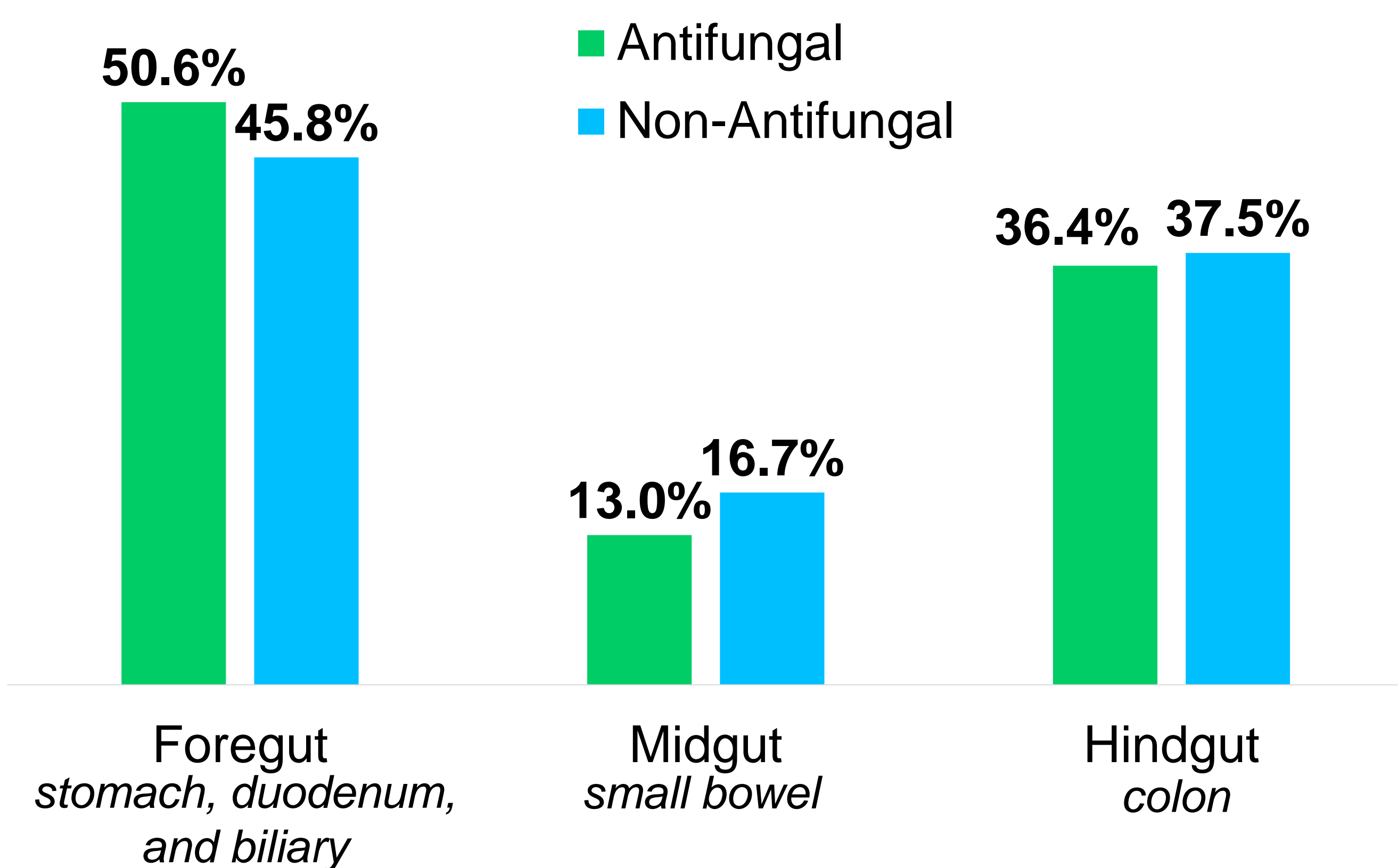
- Individual components of the primary outcome, post-operative candidemia, infection related readmission within 30 days, hospital length of stay, time to initiation of antifungals

## Results

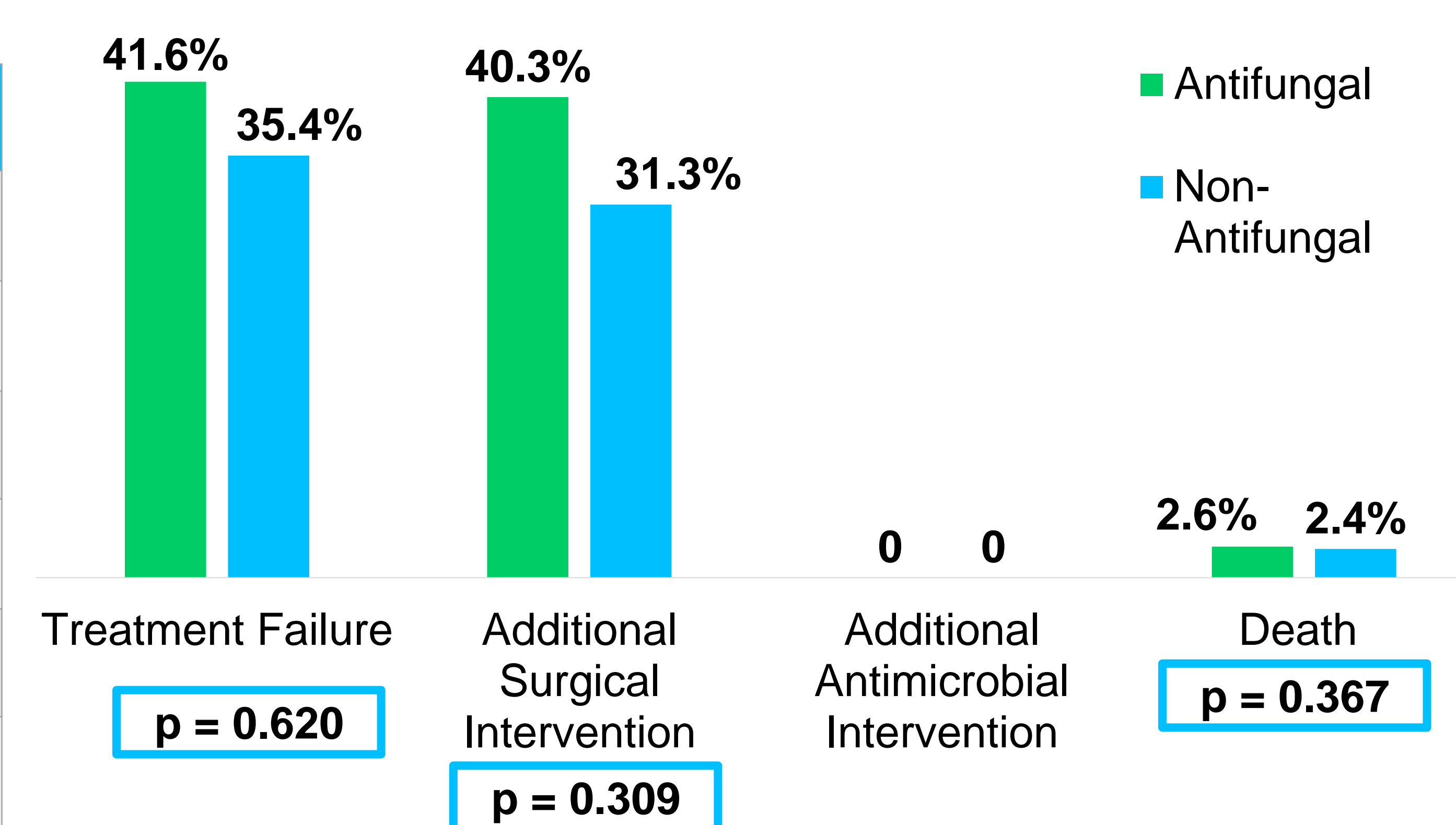
**Table 1: Population Characteristics**

Characteristic	Antifungal (n=77)	Non Antifungal (n=48)	P-value
Sex, Male n (%)	39 (50.6%)	24 (50%)	0.944
Age (years) Mean (SD)	66 (15.6)	61 (13)	0.067
ICU admission n (%)	51 (66.2%)	11 (22.9%)	< 0.001
SAPS II Score Median (IQR)	29 (23, 37)	22.5 (20, 24.6)	0.003
Prior IAI n (%)	10 (13%)	35 (72.9%)	0.047
Duration of Antimicrobials (d) Median (IQR)	10 (7, 14)	7 (4.75, 10)	< 0.001
Antifungal Agent	Fluconazole: 69 (89.6%) Micafungin: 8 (10.4%)	N/A	N/A
Time to Initiation of Antifungals (hours) Mean (SD)	43.1 (34.6)	N/A	N/A
Antifungal Duration (d) Mean (SD)	8.79 (5.25)	N/A	N/A

**Figure 1: Surgical Intervention by Anatomic Zone**



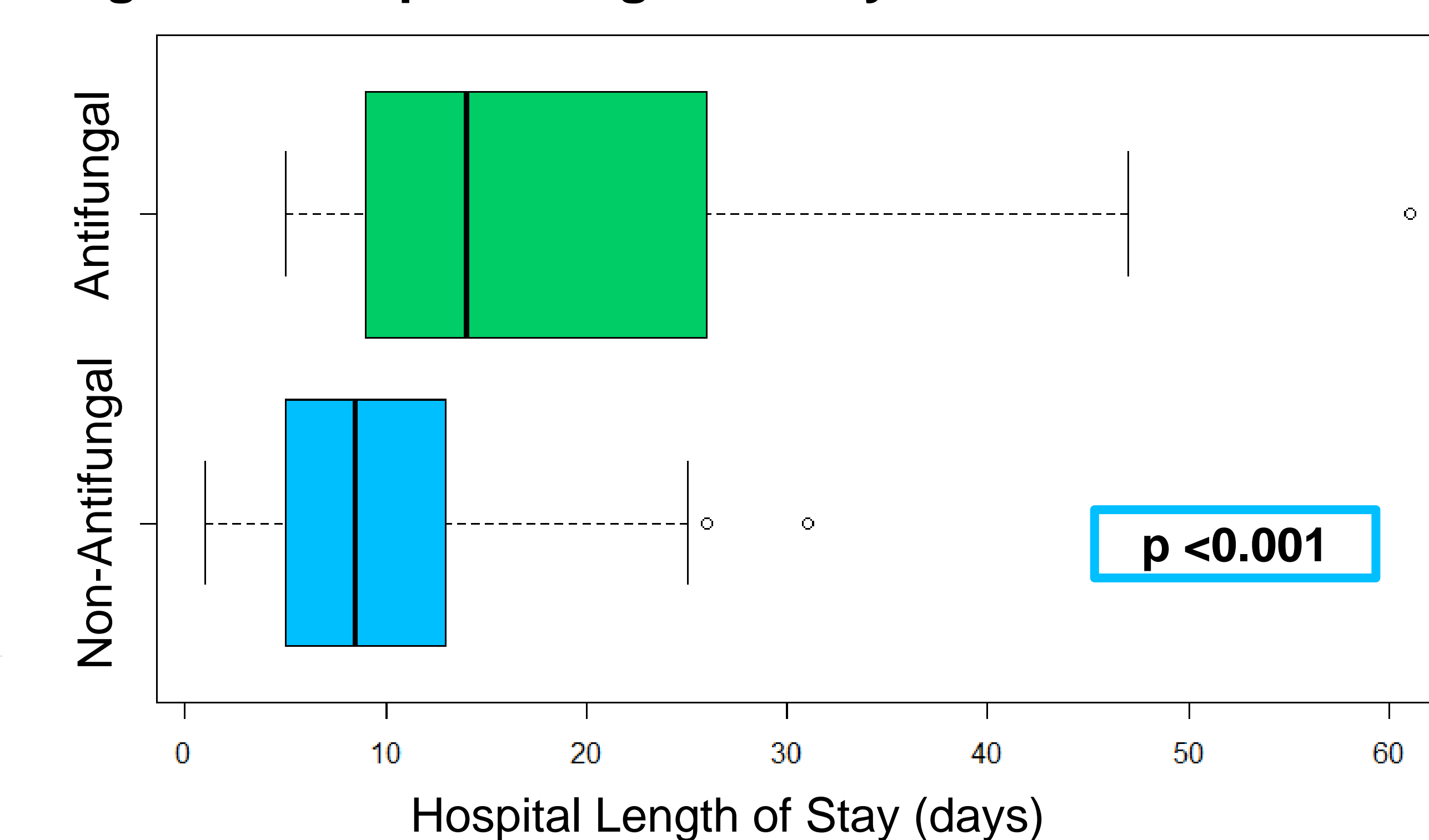
**Figure 2: Primary Outcome**



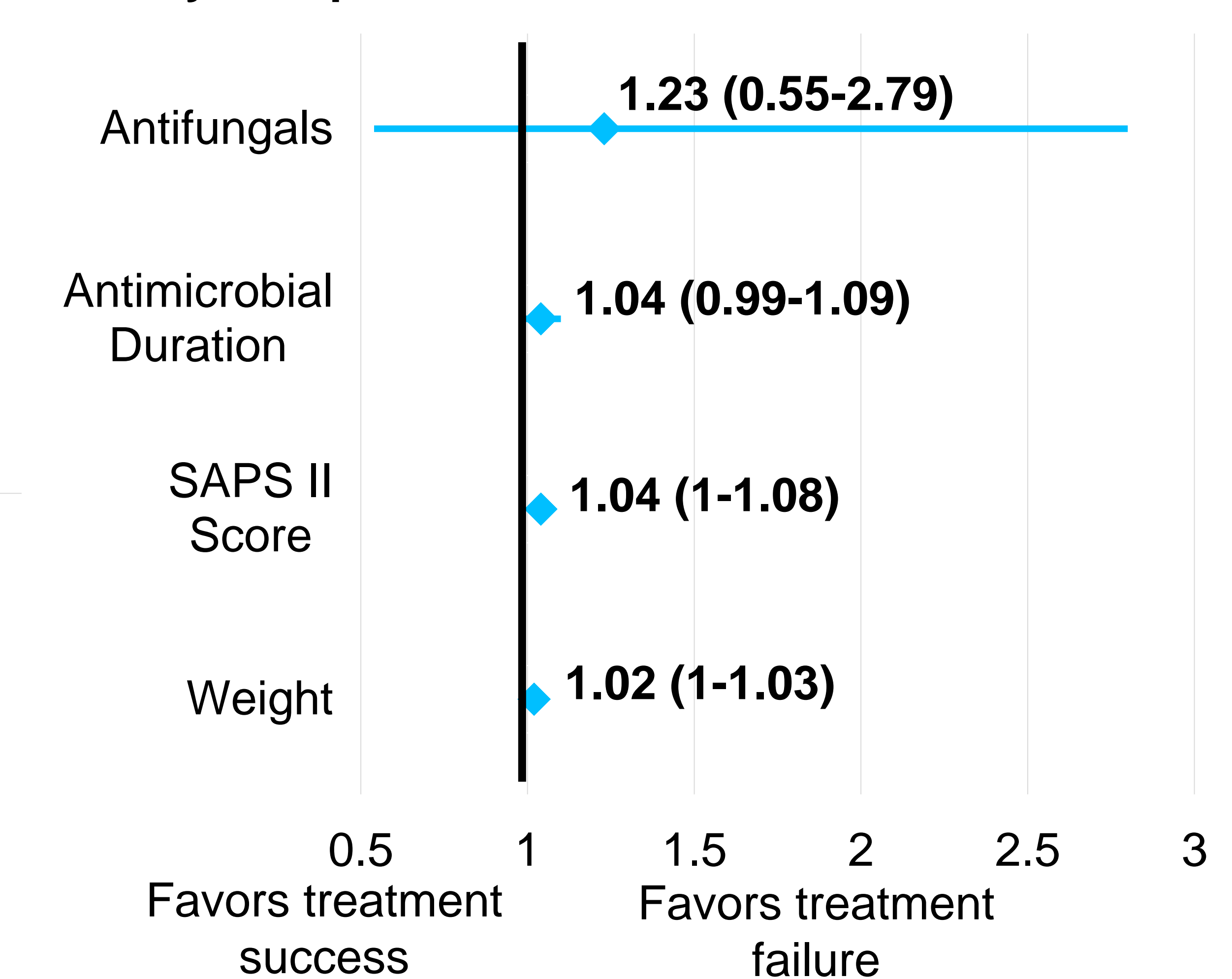
**Figure 3: Infection Related Readmission within 30 Days**



**Figure 4: Hospital Length of Stay**



**Figure 5: Multivariable Logistic Regression for Primary Composite Treatment Failure**



## Conclusion and Discussion

- There were no instances of post-operative candidemia
- Patients with *Candida* intra-abdominal infections that underwent source control had a similar rate of treatment failure at 30 days regardless of antifungal therapy status
- Incidence of treatment failure was primarily driven by requirement of additional surgical intervention
- Patients who received antifungal therapy had a higher severity of illness
- In patients who achieve source control for *Candida* intra-abdominal infection with a low severity of illness, withholding antifungal therapy may be reasonable
- Further studies are needed to investigate the role of antifungals in *Candida* intra-abdominal infections following source control in critically ill patients, or patients with a higher severity of illness at baseline