Observing the trends of echinocandin resistance patterns in common *Candida* species in a tertiary care center in the Himalayan foothills.

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Introduction

- Among fungal pathogens, *Candida* species are the predominant pathogenic agents.
- They are responsible for causing a range of infections from superficial mucocutaneous to invasive candidiasis.
- Traditionally, *C. albicans* has been the most frequently isolated species.
- However, there has been a notable epidemiological shift toward non-albicans *Candida* (NAC) species such as *C. glabrata, C. tropicalis, C. krusei*, etc., worldwide.
- Rapid, accurate identification of yeasts, along with antifungal susceptibility (AFST) profiling, is key for initiating targeted and timely therapy.
- In this study, we evaluated the trends of antifungal susceptibility of *Candida* species isolated from clinical samples for a decade

Objectives

- The purpose of this ongoing retrospective study was to analyse antifungal susceptibility of commonly isolated yeast species for the development of local antibiogram.

Material and Methods

- Clinically Isolated common strains of *Candida* were selected for this study
- They were subjected to AFST for echinocandin – Anidulafungin, Caspofungin, and Micafungin per the CLSI M27-A3 and interpretation was per M60 & M27M44S guidelines.
- All results were compiled in MS Excel 2019 version
- AFST analysis was done using WHONET 2024
- **Statistical analysis –** Categorical data were presented in numbers and percentages.

Results

- *Candida tropicalis* was the most commonly isolated species, followed by *Candida albicans*, *Candida krusei*, and *Candida glabrata.*

Table 1

Year	*Candida tropicalis*	*Candida albicans*	*Candida krusei*	*Candida glabrata*
2014	97	45	82	9
2015	89	50	58	31
2016	171	140	31	30
2017	399	191	52	51
2018	274	160	61	50
2019	382	200	135	81
2020	255	135	138	91
2021	226	114	27	100
2022	301	274	104	119
2023	239	131	30	51
Total	2433	1440	718	613

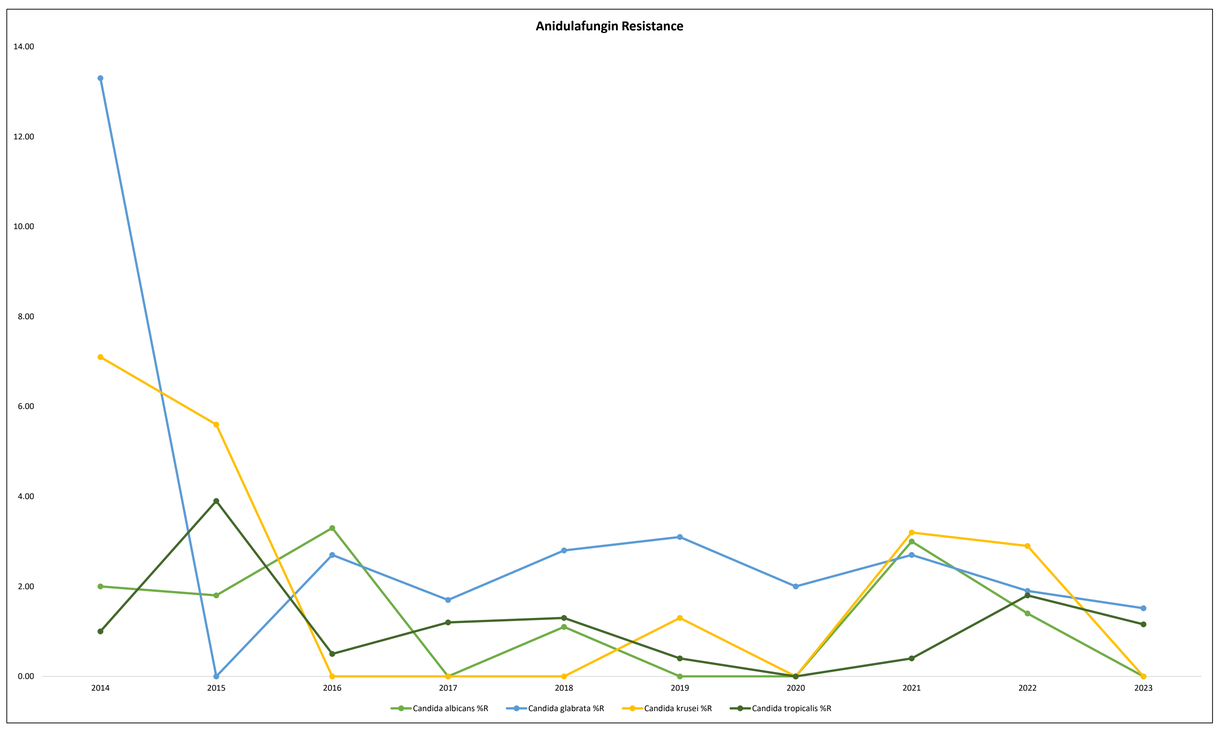
Results

A distinct pattern of decline in resistance during the study period was noted for

1. Anidulafungin (Figure 1)

- *C. albicans* (2.0% to 0.03%)
- *C. krusei (* 7.1% to 0.01%)
- *C. glabrata* (13.3% to 1.52%)

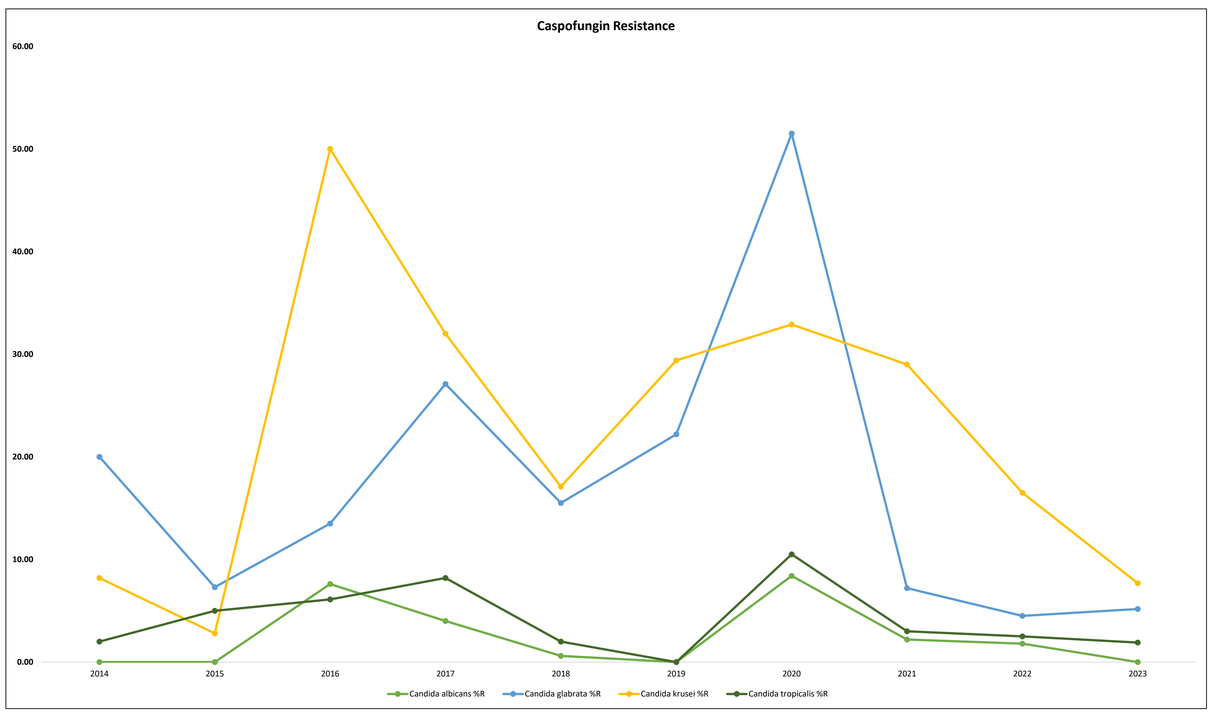
- Anidulafungin resistance for *C. tropicalis* remained rather unchanged during the study time period.



2. Caspofungin

- *C. tropicalis* (2.0% to 1.19%)
- *C. krusei (*8.3% to 7.6%)
- *C. glabrata* (20.0% to 5.17%)

- Caspofungin resistance for *C. albicans* remained rather unchanged during the study time period.



Conclusion

- There is a clear, and distinct decrease in echinocandin resistance over a decade-long period.
- In the case of anidulafungin, with the exception of *Candida tropicalis*, all the species showed a gradual decline in resistance.
- Similarly, for Caspofungin, with the exception of *Candida albicans*, all the species showed a gradual decline in resistance.
- A comprehensive antibiogram for all other antifungals may be helpful in the future for reconsidering treatment guidelines at the level of the institutes.