



# The evaluation of the empiric antibiotic protocol for neutropenic fever in pediatric patients at SSM Cardinal Glennon Medical Center



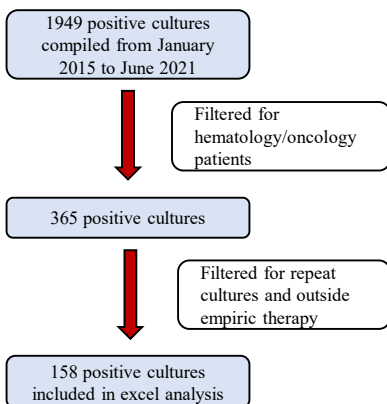
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## Introduction

- Febrile neutropenia is a common adverse effect for patients undergoing chemotherapy or other myelosuppressive immunotherapies
- Only 10 – 30% of neutropenic fevers stem from identifiable microbiologic causes (mostly gram-positive in etiology)<sup>1</sup>
- Guidelines suggest an antipseudomonal  $\beta$ -lactam, a fourth-generation cephalosporin, or a carbapenem<sup>2</sup>
- Cardinal Glennon protocol uses ceftazidime
- Antimicrobial Stewardship is important for addressing antibiotic misuse and slowing resistance

## Methods

### Data collection and analysis



## Survey

6 questions survey focused on empiric antibiotic protocol for febrile neutropenia at respondents' institutions

## Results

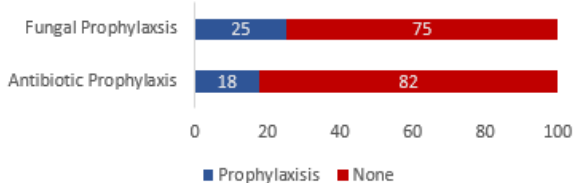


Figure 1. Prevalence of fungal and antibiotic prophylaxis

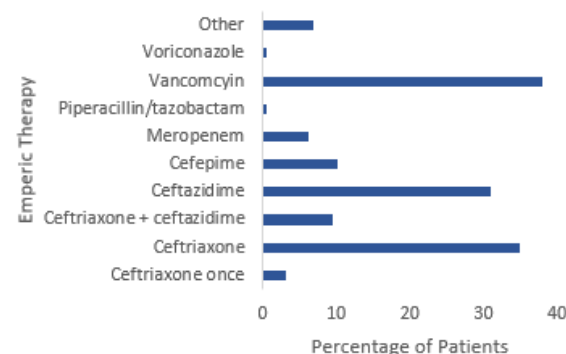


Figure 2. Empiric therapy agents and percentage of patient on each agent

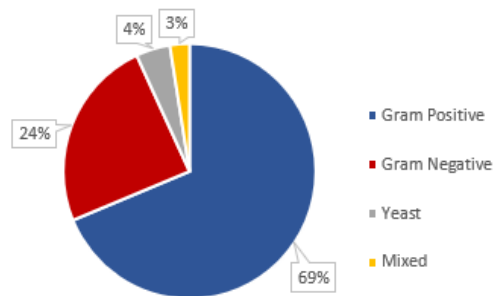


Figure 3. Organism Etiology Breakdown

Table 1. List and quantity of identified organisms for included cultures

Gram Negative	Number of Isolated Cultures
KLEBSIELLA PNEUMONIAE	16
ENTEROBACTER CLOACAE COMPLEX	7
Gram Positive	
STAPHYLOCOCCUS EPIDERMIDIS	37
STREPTOCOCCUS MITIS/ORALIS	21

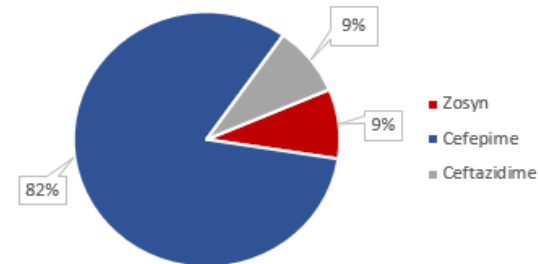


Figure 4. Survey empiric antibiotic of choice breakdown

## Discussion

- Empiric antibiotic choice relies on local resistance patterns. As of 2020, local ESBL E.Coli and K. pneumonia prevalence were 4 and 5% respectively.
- Coverage is required for both gram-positive and gram-negative organisms despite the concerns for aggressive gram-negative infections in immunocompromised patients
- Cost is similar in comparison for the typical anti-pseudomonal agents listed in guidelines
- Evaluation limitations include lack of clinical presentation information as well as the inability to compare interinstitutional antibiograms
- Patients may benefit from monotherapy with cefepime due to increased coverage with less risk for adverse events

## Acknowledgements

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SIUE SOP Faculty and Staff

## References

1. Meckler, G. and Lindemulder, S. Fever and Neutropenia in Pediatric Patients with Cancer. *Emerg Med Clin N Am*, 2009; 27: 525 - 544. PMID: 19646652
2. Vedi, A., Pennington, V., O'Meara, M., Stark, K., Senner A., Hunstead P., Adnum K., Londall W., Maurice L., Wakefield C., Cohn R.J. Management of fever and neutropenia in children with cancer. *Support Cancer Care*, 2015; 23: 2079 – 2087. PMID: 25533581