

Selective Antibiotic Suppression Does Not Lead to Adverse Outcomes in Neutropenic Patients with Gram-Negative Bacteremia

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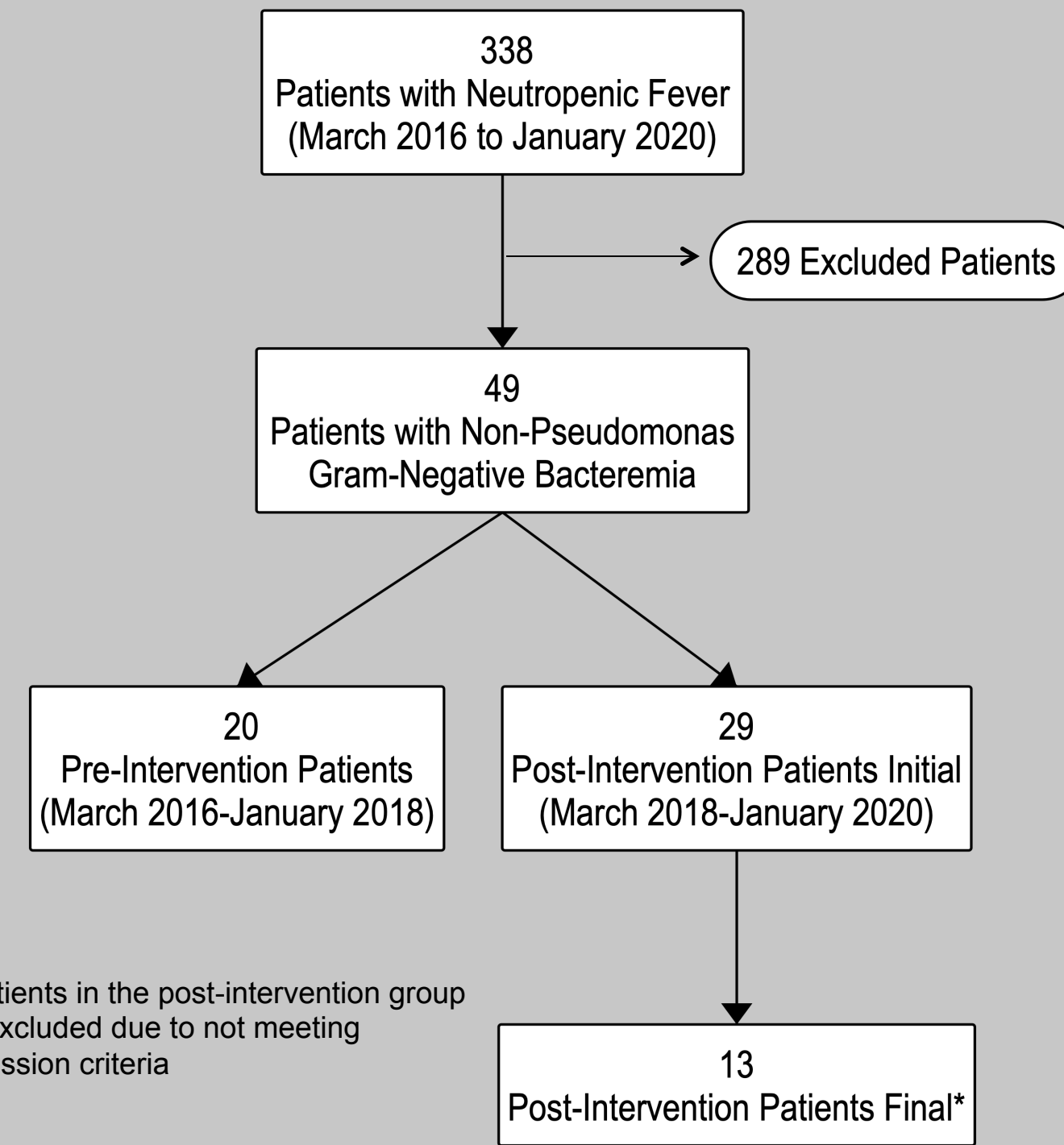
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BACKGROUND

- Inappropriate antibiotic prescribing is largely responsible for rising rates of antimicrobial resistance.¹
- One principle strategy of antimicrobial stewardship programs (ASPs) to reduce inappropriate prescribing is selective suppression of antibiotics on culture reports.²
- Studies on this topic are limited.^{3,4,5,6} We evaluated if ASP suppression of anti-pseudomonal antibiotics adversely affects patients with febrile neutropenia and gram-negative bacteremia.
- Rationale for population of interest:
 - Even if their blood culture isolate is sensitive to non-pseudomonal agents, these patients still require broader pseudomonal coverage to treat their febrile neutropenia.⁷



The Accelerate Pheno System allows our ASP to create algorithmic criteria for the release and suppression of antibiotic susceptibilities on culture reports.

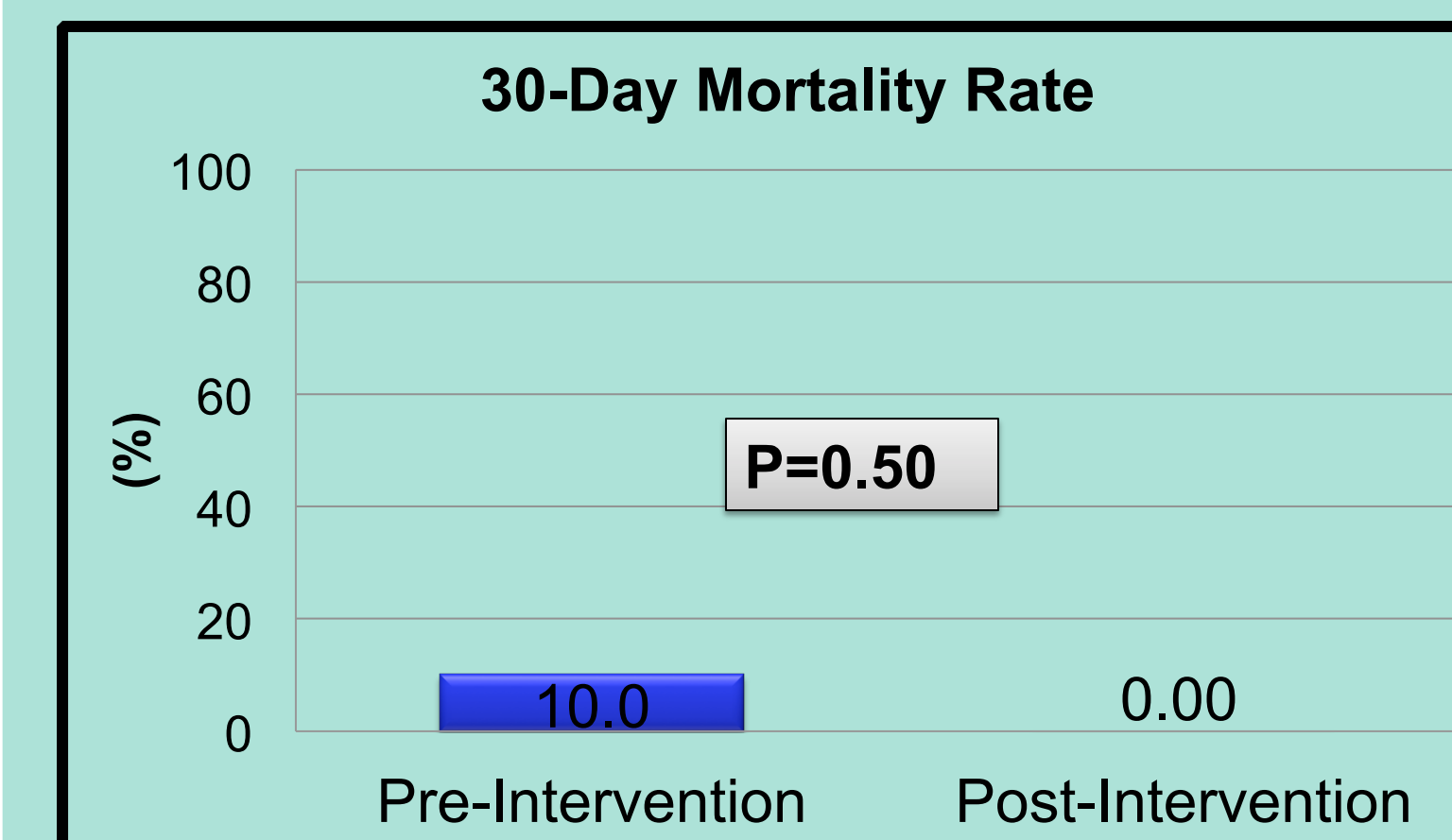
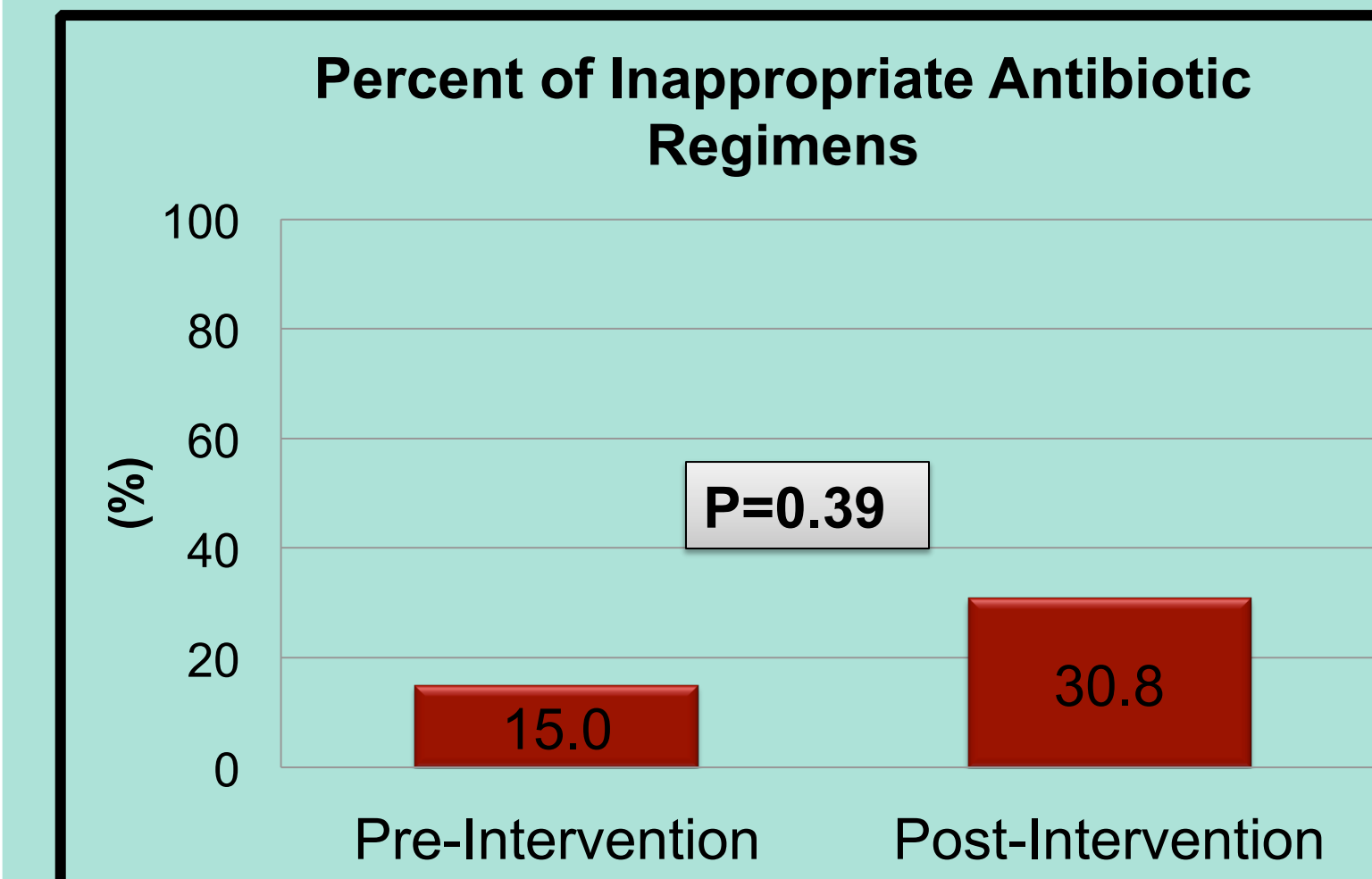


METHODS

- Retrospective review of antibiotic regimens given to patients with febrile neutropenia *and* gram negative bacteremia from 2016 – 2020
- **Intervention:** February 2018 UAMS ASP begins suppressing cefepime and meropenem susceptibility results from *E. coli*, *Klebsiella*, and *Proteus* spp
 - ASP suppression criteria: isolate must be sensitive to cefepime, ceftriaxone, and ceftazidime
 - Antibiotic regimens both pre-and post-intervention were deemed inappropriate if the patient was de-escalated to a narrow-spectrum, non-pseudomonal agent while neutropenic
 - Fishers exact and chi-squared test were performed where appropriate

RESULTS

- Three out of 20 patients in the pre-intervention group (15%) and 4 out of 13 patients in the post-intervention group (30.8%) were inappropriately tailored to narrow-spectrum antibiotics (p=0.39)
- The 30-day mortality was 10.0% pre-intervention and 0% post-intervention (p=0.50)
- Meropenem was part of the antibiotic regimen in 45% pre-intervention and 38.5% post-intervention (p=0.74)



CONCLUSIONS

- After ASP-led antibiotic suppression was implemented:
 - There was no significant difference in inappropriate antibiotic regimens prescribed for patients with febrile neutropenia and gram negative bacteremia.
 - There was no significant difference in 30-day mortality for patients with febrile neutropenia and gram negative bacteremia.
 - There was no significant reduction in antibiotic regimens that included meropenem.
- Larger studies are needed to verify these findings.

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