GNR Bacteremia: To Reculture?

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Background:

- All case-fatality rate for bacteremia is about 20% but may be as high as 60% among elderly patients[1]. The high mortality and the common practice of "culture if spikes" leads to frequent orders of blood cultures in the inpatient setting.
- Recent studies have shown that blood cultures have low diagnostic yield[2,3]. Complications from blood cultures include patient discomfort and contaminants leading to increased antibiotic use and longer hospital stays.
- In review of literature, there is no evidence for repeat blood cultures in uncomplicated GNR bacteremia unless patient has persistent fever/ leukocytosis 72 hrs after start of antibiotics or new episode of sepsis[4,5,6].

Specific Aims:

1. Review how often repeat blood cultures are ordered in uncomplicated GNR bacteremia on our inpatient service
2. Review updated guidelines and provide guide in ordering blood cultures
3. Observe rate and indications for ordering repeat blood cultures in patients with GNR bacteremia on our service after the intervention

Methods:

- Retrospective analysis of our inpatient family medicine service found 16 patients with GNR bacteremia during a period of 1 year (11/17/2020 - 11/16/2021).
- Blood cultures were repeated 14 times and were sterile in all cases
- Intervention: Lecture given to residents to review current literature and provided guide in ordering repeat blood cultures

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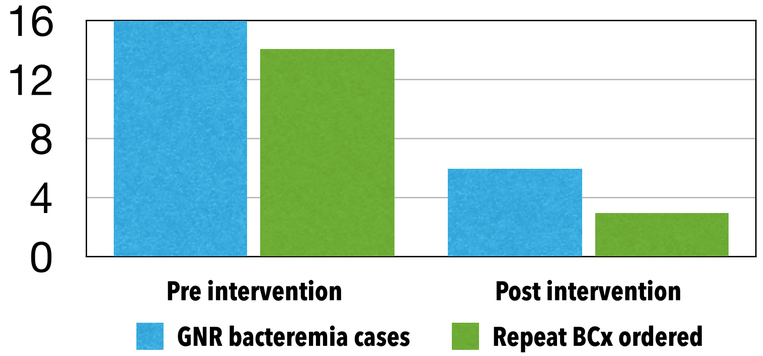
Repeat blood cultures only if one of the following criteria is met:

A. Persistent fever or leukocytosis for 72hr after start of antibiotics
B. New episode of sepsis
C. Complicated (MDR, Unknown source, Unresolved focus of infection, Endovascular infection, ESRD on HD, Febrile Neutropenia

Results:

- During the ~6 months following the intervention (1/15/2022 - 8/3/2022) we had 6 patients with GNR bacteremia
- Repeat blood cultures ordered 3x by our service for appropriate indications (ESBL, New episode of sepsis, Neutropenic fever)



Conclusion:

- This quality improvement study resulted in 100% effectiveness in eliminating inappropriate reculturing in patients with GNR bacteremia on our inpatient service.
- We also demonstrate the power of a Plan-Do-Study-Act model in delivering improvements to patient care through learning and tests of change.

References:

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