Using the Q Score and Q234 Score to Decrease Unnecessary Pathogen Reporting in Wound Cultures

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Abstract (Updated)

Purpose/Background: Wound cultures performed on swabs collected using superficial techniques can easily be contaminated by commensal flora. While there is acceptance that only certain pathogens identified on these cultures are likely to cause true disease, potential pathogen (PP) work-up can vary between labs and even among microbiologists. Southeastern Regional Medical Center (SRMC) does not employ a standardized method for deciding which organisms to report in wound cultures. The literature provides evidence that using the Q score or Q234 score can help microbiology appropriately identify and report likely causative pathogens obtained from a wound infection. Using these methods, potential pathogens and other organisms, including normal flora, do not receive identification (ID) and antimicrobial susceptibility testing (AST). Although the two scoring systems yield different results, both have the potential to reduce the number of pathogens reported at SRMC in a standardized manner.

Methodology: A retrospective evaluation of wound cultures processed by the SRMC microbiology laboratory was conducted for inpatients during the time period of December 28, 2015 to July 31, 2016. Culture and Gram stain results were collected, and Q234 score were retrospectively calculated for each culture. The number and type of pathogens receiving ID, and AST was compared for Q score, Q234 score, and actual pathogens worked up by SRMC laboratory.

Results: A total of 80 wound cultures were reviewed during the study period. These wound cultures contained 155 pathogens, other than diptheroids (n=18) and normal flora (n=20), and the SRMC laboratory performed ID and AST on 129 organisms (83.2%). The Q score suggested performing ID and AST on 101 pathogens (65.2%); Q234 score, 92 pathogens (71.3%).

Conclusions: Utilizing the Q score or Q234 score for determining PP in wound cultures has the potential to decrease over-reporting of noninfectious pathogens at a community teaching hospital. In addition, education is needed which organisms to report in wound swabs.

Background

• Wound cultures have high potential for contamination when collected using superficial swabs and SRMC does not have a standard method for pathogen reporting in wound cultures. The Q score and Q234 score can help microbiology appropriately identify and report likely causative pathogens obtained from a wound infection.

\[ Q = \frac{M}{100} \times 100 \]

The Q score is used to determine the number of PP in the culture that should receive work-up. The scoring system rejects normal flora from ID and AST, including diptheroids, coagulase-negative staphylococci (CNS), nonpathogenic Neisseria species, and alpha- and non-hemolytic streptococci that are commonly found on the skin/mucosal surfaces.

Methods

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Conclusions

• Utilizing the Q score or Q234 score for determining PP in wound cultures has the potential to decrease over-reporting of noninfectious pathogens at a community teaching hospital; however, the ability of either scoring system to meaningfully decrease antibiotic prescribing is doubtful.

• The stewardship team should aid in the development of policies regarding potential pathogens to report from wound swabs, with specific emphasis on infectious and non-infectious staphylococci and streptococci.