

Antimicrobial Stewardship via the Verigene Gram-Positive Blood Culture Nucleic Acid Test

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Objectives

- To determine the accuracy of the Verigene Gram Positive Nucleic Acid test.
- To determine if the Verigene Gram-Positive test should be utilized by AMH pharmacy.

Methods

- Creation of an antibiotic protocol and generalized dosing table based on regional antibiograms and drug compendia.
- A retrospective chart review before and after implementation of the newly created protocol.
- Inclusion Criteria: Admission to AMH during study time frame, age over 18, and blood cultures where the Verigene test was performed.
- Exclusion criteria: Patient under age 18, not admitted to AMH, infection suspected to be Gram-negative, and infection suspected to be caused by multiple organisms.

Limitations

- Can Only be applied to Gram-Positive organisms.
- Only accurate in monomicrobial infections.
- Only relevant for adjusted therapy for patients with bacteremias.

Results

Organism	# Isolates	% Verigene Accuracy
CONS (Coagulase-negative Staphylococcus)	31	94%
MSSE (Methicillin- Susceptible Staphylococcus epidermidis)	24	96%
MRSE (Methicillin- Resistant Staphylococcus epidermidis)	9	100%
MSSA (Methicillin-Susceptible Staphylococcus aureus)	7	100%
MRSA (Methicillin-Resistant Staphylococcus aureus)	9	100%
Group B Strep (Streptococcus agalactiae)	4	100%
Group A Strep (Streptococcus Pyogenes)	3	100%
Streptococcus constellatus	1	100%
Streptococcus mitis	2	100%
Streptococcus anginosus	1	100%
Streptococcus dysgalactiae	2	100%
Enterococcus faecalis	1	100%
Streptococcus pneumoniae	1	0%
Staphylococcus lugdunensis	1	100%
All organisms reviewed	96	97%

Outcome	Pre Protocol	Post Protocol
# Interventions Recommended	2	10
# Interventions Accepted	2	6
Average time to recommendation	34.5 hours	14.6 hours
Average time for acceptance	32 minutes	1 hours and 8 minutes
Average Verigene Result Time	29.2 hours	26.1 hours
Average Final Culture Result Time	124.4 hours	119.7 hours

Type of Intervention Taken	# of Interventions Taken
Alternative Therapy Used	3
Therapy Stopped	9
Additional Therapy Used	0

Conclusions

- This project shows a quicker identification time for organisms when this test is used.
- The quicker identification leads to quicker targeted antimicrobial therapy for patients.
- This project shows a correlation between the implementation of this protocol and an increase in AMH pharmacy intervention.
- More data is needed to determine the accuracy of the Verigene test for Gram-Negative organisms.

