P0288
Poster Session I
EUCAST antimicrobial susceptibility testing

COMPARISON OF A CUSTOM MADE TREK PANEL WITH EUCAST DISC DIFFUSION FOR ANTIMICROBIAL SUSCEPTIBILITY TESTING OF STAPHYLOCOCCUS AUREUS

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Objectives

Accurate antimicrobial susceptibility testing (AST) of *Staphylococcus aureus* is important in infection control. A custom made panel (TREK Sensititer, Oxoid) including 21 different antimicrobials was introduced in our laboratory in January 2013. In order to test its accuracy the panel were evaluated against EUCAST disc diffusion.

Vancomycin and oxacillin posed a challenge as they require 24h of incubation according to EUCAST, which exceeds the 16-20h required for the other antimicrobials. As reading the plates twice is laborious, a second aim of the study was to evaluate the impact of incubation time on the TREK Sensititer results.

Methods

The evaluation included 214 *S. aureus* (109 MSSA and 105 MRSA) isolates for the comparison of MIC and disc diffusion and an additional 60 isolates for the evaluation of incubation time. Disk diffusion was performed according to the methodology and breakpoints of EUCAST for the following antimicrobials: Penicillin, cefoxitin, erythromycin, clindamycin, tetracycline, kanamycin, rifampin, fusidic acid, norfloxacin, linezolid, mupirocin and trimethoprim-sulfametoxazole. The TREK Sensititer panel included the same antimicrobials and in addition ceftobiprol, ceftarolin, daptomycin, gentamycin, linezolid, moxifloxacin, oxacillin, teicoplanin, tigecyclin and vancomycin. The panels were read after 20h and 24h of incubation.

Vancomycin results were compared with a challenge set of eight (hVISA and VISA) reference strains.

Results

A total of 2,568 SIR-interpretations were done on the 214 isolates for the comparison between disk diffusion versus MIC. A total of 26 errors (1%) were observed. Of these were 6 minor errors, 11 were major errors, and 9 (0.4%) were very major errors. Fusidic acid was involved in most errors, 4 major errors and 2 very major errors. For cefoxitin only 1 error (major error) was observed.

A total of 6,850 readings were obtained for the comparison between 20h and 24h incubation. An essential agreement (MIC within ± one 2-fold dilution) was seen for 6,835 readings (99.8%). All 15 readings without essential agreement had higher MICs after 24h compared to 20h. Categorical agreement was seen for 6,838 interpretations (99.8%). Errors included 2 minor errors and 10 major errors. Two of the major errors concerned cefoxitin. All eight challenge strains were correctly detected with an MIC at 4 mg/L or more after 24h of incubation.

Conclusion

For a surveillance purpose the introduction of a custom made panel increased the number of antimicrobials routinely surveyed without compromising the quality of the surveillance. Likewise the incorporation of antimicrobials requiring different incubation times did not compromise the overall results.

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