E007

4-hour Educational Workshop

Antimicrobial susceptibility testing with EUCAST breakpoints and methods

Clindamycin susceptibility testing and reporting

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Objectives

The background to EUCAST recommendations on antimicrobial susceptibility testing and reporting for clindamycin will be reviewed.

Methods

International guidelines and published literature and were reviewed.

Results

In staphylococci and streptococci, most resistance to macrolide, lincosamide and streptogramin type B (MLSB) antimicrobial agents is mediated by the *erm* genes and is induced by erythromycin, clarithromycin and azithromycin, but not by clindamycin (dissociated resistance or MLSB inducible resistance). Hence inducible strains are resistant to erythromycin but not to clindamycin in antimicrobial susceptibility tests. Strains with MLSB constitutive resistance are resistant to both agents. Although rare, there are isolates resistant to clindamycin (and lincomycin) but susceptible to macrolides. Detection of dissociated resistance to clindamycin requires induction with erythromycin and reliable test methods are well established.

For many years there has been debate about whether staphylococci and streptococci with inducible clindamycin resistance should be reported resistant or susceptible as inducible strains segregate clindamycin resistant mutants, which may be selected during treatment, possibly leading to treatment failure.

Published evidence for staphylococci relates entirely to *S. aureus* and while literature is not extensive it supports reporting of isolates from serious infections as resistant. However, full resistance is less likely to develop during short term therapy and clindamycin may still be effective when used for therapy of less serious skin and soft tissue infections.

Evidence for streptococci is rare and while there is no strong evidence the very few publications support the cautious approach of reporting of isolates from serious infections as resistant. It is also noted that consistent reporting for staphylococci and streptococci is less likely to lead to confusion in clinical laboratories. As with staphylococci, full resistance is less likely to develop during short term therapy and clindamycin may still be effective when used for therapy of less serious skin and soft tissue infections. In addition, the clinical importance of inducible clindamycin resistance in combination treatment of severe S. pyogenes infections is not known.

Conclusion

Antimicrobial susceptibility testing based on EUCAST guidelines will reliably detect resistance to clindamycin, including dissociated resistance. While published evidence is not strong, particularly for streptococci, it is recommended that isolates with dissociated resistance should be reported resistant, with a comment that clindamycin may still be effective when used for short-term therapy of less serious skin and soft tissue infections as full resistance is unlikely to develop during such therapy.