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Sir,

In these guidelines, the authors recommend that ‘A minimum inhibitory concentration (MIC) . . . should be established by a standardized laboratory method to ensure susceptibility.’

What evidence is available that MIC determination improves patient care and outcome or influences the treatment? I know of one presentation at the European Congress for Clinical Microbiology and Infectious Diseases by Walton et al. from University College London Hospitals who analysed 129 cases of endocarditis and concluded that ‘Antibiotic treatment in endocarditis can be safely chosen on the result of disc sensitivity testing and adjusted on clinical grounds without MIC.’ The same group recently published analysis of 125 patients admitted between 1981 and 1999 in whom the MIC had been measured. Their conclusion is inconclusive: ‘The measurement of MIC appears prognostically important in deciding the surgical management of endocarditis.’

Can the experts who formulated the guidelines provide some evidence for their recommendation, please?

References


Endocarditis guidelines: authors’ response

John D. Perry* on behalf of the Working Party of the British Society for Antimicrobial Chemotherapy

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Sir,

Professor Shah has questioned the recommendation for an MIC determination to be performed on strains isolated from cases of infective endocarditis (IE). When considering the need for MIC determination, one has to consider the nature of the infecting microorganism, the antimicrobial under test and the reliability of any alternative methodology.

It has been stated that disc susceptibility testing is often adequate to determine susceptibility for bacteria causing IE, however the choice of disc susceptibility method is often not stated or discussed. For example, many laboratories in the UK now use the BSAC Standardized Disc Susceptibility Testing Method. However, guidelines for testing α-haemolytic streptococci, which remain the leading cause of native valve IE, were not available at the end of 2004, which leads to questions as to how such tests might be interpreted. Moreover, the BSAC Working Party and other authorities recommend therapeutic regimens for α-haemolytic streptococci that vary according to the MIC for the causative strain.

Other examples exist where disc susceptibility methods may not be appropriate, for example, in assessing the penicillin susceptibility of enterococci. The determination of glycopeptide susceptibility in enterococci remains problematic as shown in recent surveys and the emergence of staphylococci with intermediate resistance to glycopeptides in cases of IE is likely to provide a further challenge to the diagnostic laboratory in future years.

Professor Shah cites the report of Walton et al. who performed a case study to examine the contribution of the MIC to the decision to treat endocarditis surgically. The authors concluded that a moderately elevated MIC of fluoxacinillin may be associated with failure of medical treatment, when fluoxacinillin is used, even in combination. They also agreed that the MIC of penicillin for α-haemolytic streptococci was useful in determining length of treatment. Such findings support MIC determination for strains causing IE and further studies that examine the relationship between MIC and treatment outcome are warranted.

In conclusion, we accept that for some organism/antimicrobial combinations, disc susceptibility testing may be adequate for guiding therapy, however, our consensus opinion is that our general recommendation to perform MIC testing is justified. IE remains an uncommon disease with high mortality in which the choice and duration of therapy are critical to a successful outcome. Also, if MIC testing is considered by some laboratories to be technically