In vitro susceptibility of Neisseria meningitidis

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Sir,

Reduced susceptibility of Neisseria meningitidis to penicillin (MICs ≥ 0.12 mg/L) in the UK was reported by Jones & Sutcliffe in 1990 to be at a level of 3%, comparable to that found in 1987. We have recently undertaken an in vitro study to investigate the susceptibility of meningococci from our collection of strains, to a variety of antimicrobial agents, including penicillin, using BSAC methodology. During this investigation we detected a β-lactamase-negative strain with penicillin and amoxycillin MICs of 0.12 mg/L and 0.25 mg/L, respectively.

In 1998 the Working Party on Sensitivity Testing published, in the BSAC Summer Newsletter, recommendations for the testing and interpretation of the susceptibility of meningococci to penicillin. We therefore decided to see whether, using these recommendations, we would be able to identify this β-lactamase-negative strain as having reduced susceptibility to penicillin. As can be seen in the Figure, 55 strains with penicillin MICs of ≤0.06 mg/L gave corresponding zones of inhibition with a 1 U penicillin disc of ≥26 mm, unlike the strain with reduced susceptibility which had a zone of 22 mm. Using BSAC interpretative criteria (zone diameter breakpoint denoting sensitivity ≥20 mm) this strain would be regarded as sensitive to penicillin. Given that 3% of infections may be caused by meningococci with reduced susceptibility to penicillin and the clinical evidence that infections caused by these strains may not respond to standard dosing regimens, the necessity for detecting these strains is apparent. These data suggest that the zone diameter breakpoint for determining sensitivity of meningococci to penicillin, using BSAC methodology and a 1 U penicillin disc should be amended so that a zone of ≥25 mm denotes sensitivity.

References
