Neonatal infections with coagulase negative staphylococci

Sir,—In their recent leading article Millar et al state that resistance of coagulase negative staphylococci to penicillin, aminoglycosides, and other antibiotics is common.1

This is not our experience at Liverpool Maternity Hospital where coagulase negative staphylococci are responsible for most proved neonatal infections.2 When any infection is suspected, our practice is to treat initially with ampicillin and gentamicin until the results of cultures are available after which treatment may be adjusted according to antibiotic sensitivities. Occasionally the infant has a coagulase negative staphylococci infection and has clinically improved despite in vitro resistance to ampicillin and gentamicin. If this is the case these antibiotics are often continued with good effect confirming a discrepancy between in vivo and in vitro sensitivities.

Since 1986 we have used amoxicillin/clavulanic acid (Augmentin, Beecham) for coagulase negative staphylococci infections caused by penicillin, methicillin, and gentamicin resistant organisms when the initial ampicillin and gentamicin combination has failed. In a series of 70 episodes of coagulase negative staphylococci septicaemia occurring between January and July 1987 only one strain was found to be resistant to amoxicillin/clavulanic acid. The majority of strains were β-lactamase producers.

Coagulase negative staphylococci infection cannot usually be differentiated clinically from other neonatal infection; using vancomycin to treat suspected coagulase negative staphylococci infection as suggested by Millar et al means using it in virtually all episodes of suspected infection. From clinical and laboratory experience we do not agree that vancomycin, which is ototoxic, nephrotoxic, has to be given by infusion and is expensive, should be the drug of first choice for the treatment of suspected coagulase negative staphylococci infection in the neonate.


1 Millar comments: Vancomycin is active in vivo and in vitro against ‘methylcillin resistant’ coagulase negative staphylococci and side effects are well documented. Coagulase negative staphylococci infection is uncommon in the first week of life, in the absence of an intravascular catheter, and in the mature neonate, so it is certainly not necessary to use vancomycin for the treatment of all episodes of suspected neonatal infection. The use of amoxicillin/clavulanic acid (Augmentin) for the treatment of neonatal infections as advocated by Shaw et al is indeed unusual. Neither of the two components are active in vivo or in vitro against ‘methylcillin resistant’ staphylococci when used as single agents. The implication of Shaw et al (although not stated) is that resistance of ‘methylcillin resistant’ coagulase negative staphylococci to amoxicillin is determined by β-lactamase enzymes and that the altered affinity of penicillin binding proteins for β-lactamase antibiotics does not contribute to amoxicillin resistance. If the hypothesis that amoxicillin/clavulanic acid is effective against ‘methylcillin resistant’ coagulase negative staphylococci in vivo or in vitro can be substantiated then those data should be published.

Endotoxin induced cochlear damage

Sir,—We read with interest the paper by Tarlow et al describing the cochlear damage in guinea pigs produced by endotoxin perfusion of the cochlea or injection into the cerebrospinal fluid. Two points are worth making.

Firstly, the concentration of endotoxin in the cerebrospinal fluid or the cochlea is not estimated, but may be several orders of magnitude greater than that in human meningitis. For example, concentrations in cerebrospinal fluid compatible with survival in meningococcal meningitis were 85-250 pg/ml in one study.3 It would be valuable to know whether cochlear toxicity in the guinea pig occurs at endotoxin concentrations in the cerebrospinal fluid comparable with those found during human meningitis.

Secondly, endotoxin mediation of cochlear damage might have important implications for children with Gram negative septicaemias as well as those with meningitis. We have seen a child who first complained of unilateral tinnitus and deafness 12 hours after presenting with meningococcal septicaemia. He had no clinical or laboratory evidence of meningitis. Subsequent audiological confirmed complete left sided hearing loss. This damage could have been mediated by endotoxin circulating in plasma.

To test the hypothesis clinically that
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Arch Dis Child 1991 66: 907
doi: 10.1136/adc.66.7.907-a