Management of bacterial meningitis in adults - Algorithm from the British Infection Society represents current standard of care


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Management of bacterial meningitis in adults

Algorithm from the British Infection Society represents current standard of care

The treatment of bacterial meningitis represents one of the success stories of modern medicine, particularly antibiotics. In the pre-antibiotic era bacterial meningitis was almost always fatal, but the prompt use of appropriate antibiotics together with supportive care can undoubtedly reduce the morbidity and the mortality of this condition substantially. And yet just 10 years ago a large study of acute bacterial meningitis in adults found a mortality of 25%.1 Why can’t we do better than that?

Acute bacterial meningitis tends to present to non-specialist, and often inexperienced, junior doctors. It is not very common—there are about 1000 patients in the United Kingdom each year—and so individual doctors will not see many patients. These are exactly the circumstances in which a management algorithm can help. The British Infection Society has recently published such an algorithm for the initial management of adult patients with presumed bacterial meningitis,2 and which represents an updated version of the evidence-based recommendations published by the society four years ago.1 Key to the success of algorithms such as this one is simplicity. The new guidelines recommend a third generation cephalosporin such as...
and prompt attention to oxygen requirements and antibiotic alone. Awareness of the early clinical signs, outcome depends on factors other than the choice of antibiotic alone. Vancomycin with or without rifampicin in case of a serious risk of infection due to penicillin resistant pneumococci. Importantly, the society recognises that a good outcome depends on factors other than the choice of antibiotic alone. Awareness of the early clinical signs, and prompt attention to oxygen requirements and circulatory support are rightly stressed.

Algorithms are not intended to cover all circumstances. For example, in some parts of the world pneumococci remain predictably sensitive to penicillin, and this drug can remain a first line agent for presumed pneumococcal meningitis, but we do not know how long this will be true. Patients in special or high risk groups, such as immunocompromised people or small children, present particular problems, and expert advice needs to be sought immediately.

Some will argue with the detail. The authors state that a lumbar puncture should not be done in patients with septicaemic meningococcal disease and take a relatively conservative approach to lumbar puncture and the use of computed tomography scans in general. The evidence base for these assertions is not always clear. It needs to be acknowledged that because of a lack of systematic controlled clinical trials, many of the recommendations of the working party, including those on the use of antibiotics, are based on expert opinion and consensus driven guidelines rather than a secure evidence base. However, in the absence of better evidence most doctors accept that documents such as these generally represent the standard of care for a particular clinical condition. The problem is that despite this guidelines are often not followed. In a revealing study carried out in the Netherlands, van de Beek et al followed up 365 adult patients with bacterial meningitis. A year before the study began, a multiprofessional group of Dutch experts drew up guidelines for the empirical treatment of bacterial meningitis. These were agreed at a national consensus conference and were subsequently widely disseminated throughout the country. During their study, van de Beek et al found that only a third of patients received treatment in compliance with the guidelines. In patients over 60 years and those with other risk factors who were arguably at greater risk of a poor outcome if treatment was suboptimal the compliance rate was as low as 17%.

Although de Beek et al could not show any obvious clinical detriment as a result of failure to comply with the approved regimen there are important lessons here. Clearly, there are many reasons why the uptake of such guidelines may be low. These include poor quality advice (for example, not evidence based or not practical), and poor dissemination of the information (targeting the wrong group of doctors, for example). Guidelines for the use of antibiotics are becoming increasingly popular as a means of improving the quality of care, but if they are to be effective they need careful consideration—not just of their content, but of how they are followed up and implemented.

An additional but less obvious benefit of the publication of such guidelines is that they draw attention to changing practice in a rapidly moving field. At the time of the last leading article in the BMJ dealing with acute bacterial meningitis, just three years ago, the management of penicillin-resistant pneumococcal infection was unclear and the role of corticosteroids debated. In the current recommendations from the society a combination of vancomycin and rifampicin is advised if resistance to penicillin is considered likely. Notably the use of adjunctive corticosteroids has changed after the recent publication of the European dexamethasone meningitis study, which showed a significant reduction in mortality in patients who were given dexamethasone 10 mg every six hours for four days and started just before or at the same time as the first dose of antibiotics.

However, though bacterial meningitis is a seemingly tractable infection, in this study the mortality from pneumococcal meningitis was still 14%, even in the group treated with steroids. There is still much to do.

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No-fault compensation systems
Experience elsewhere suggests it is time for the UK to introduce a pilot scheme

In 1978 the Pearson Commission in the United Kingdom rejected a no-fault system in dealing with clinical negligence. While declaring the existence of clinical negligence compensation system is much awaited. Reforms to be considered include fixed tariffs.