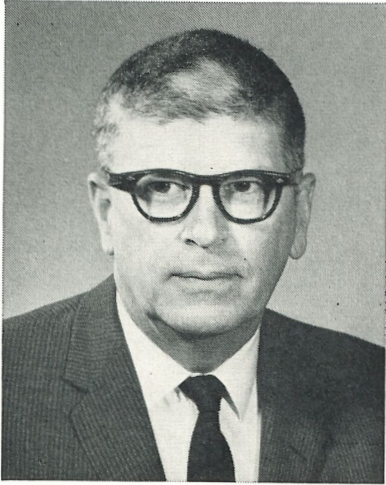


PEDIATRICS



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WHEN TO USE ANTIBIOTICS FOR RESPIRATORY INFECTIONS IN CHILDREN

The problem of whether or not to administer antibiotics in respiratory infection is a common one, and is complicated in two ways: first, we must guard against overuse of antibiotics, particularly in children; second, laboratory tests to identify the organism causing the infection are not always practical. Even so, I believe that *rational* use of antibiotics is possible anywhere—if clinical good sense is applied.

Treating Group

Suppose, for instance, that you are treating a young child for croup. You have concluded that there is no reason to suspect diphtheria, and the blood count and appearance of toxicity suggest that the infection is bac-

terial. Because *Hemophilus influenzae* is prone to invade the larynx, and because it causes a particularly severe form of croup, there is a rational basis for beginning treatment immediately with an antibiotic effective against *H. influenzae*—chloramphenicol, streptomycin, or perhaps a sulfa. In this instance, a delay in treatment until a culture could be grown could be hazardous and would not be justified. The other pertinent laboratory procedure—a sensitivity test—could only confirm that the organism was sensitive to the drugs already chosen.

Viral or Bacterial?

In children, as in adults, the most important decision is whether or not the infection is viral or bacterial. Simply

knowing this usually leaves little else that need be learned in order to treat the patient rationally. Therefore, the decision whether or not to use an antibiotic, and if so, which one, can be made with reasonable accuracy, simply on the basis of clinical judgment and knowledge of a few points about respiratory infections.

Some Helpful Points

Here are five such points I consider most helpful to remember: (1) viral infections do not respond to antibiotics, (2) most respiratory infections (some say as many as 90%) are viral rather than bacterial, (3) antibiotics should seldom be used as a prophylactic measure in respiratory infections, (4) there are only a relatively few bacteria that cause clinically recognized conditions in any given part of the body, and (5) *in vitro* sensitivity tests are of no value unless one first isolates and identifies the responsible organism (once the organism has been identified, sensitivity tests are likely to be confirmatory and helpful only when the infection is resistant to an antibiotic).

Clues to Etiology

Points 1 through 3 are too well known to need elaboration, so let us go to the fourth point. Over the years it has become evident that certain clinically recognizable conditions are caused by certain identifiable organisms. This has already been mentioned, for example, in the case of acute laryngitis in children. If croup is bacterial, it is almost always due to *H. influenzae*, especially since diphtheria has become such a rarity. Also, when obstruction is due to the dreaded acute epiglottitis the influenza bacillus should be the prime suspect.

Pneumonia presents a similar situation. When clinical signs point to a bacterial infection, we may deduce that it is probably due to one of three organisms: pneumococcus, streptococcus, or staphylococcus. All three types will respond, to some extent, at least, to penicillin. Only if the infection is due to a resistant strain of staphylococcus will a different drug be needed; usually, though, a staph infection is contracted from a hospital source so the history is important.

Pharyngitis is another example, one where we are prone to throw reason to the winds. Penicillin has become for the sore throat what rock and rye were for the common cold. This is true even though pharyngitis is far more commonly viral than it is bacterial. In fact, when streptococcal infection is not prevalent in the community, it is almost as rare as measles is when the measles virus is out of season. Not all that is exudative is streptococcal, and researchers have gone to great pains to demonstrate that the staphylococcus does not cause sore throat.

Sensitivity Tests

Finally, let us consider my fifth point: that sensitivity tests have limited practical value, and then only when the infecting organism has been identified. Many innocent bacteria can be grown from a diseased mucosa, so unless there is a good reason for suspecting the sensitive organism, the test is useless. It is not my purpose to belittle the value of the laboratory, but I do contend that clinical judgment and knowledge still form a rational basis upon which one can frequently make a decision.

Admittedly, there are situations in which the rational choice of an antibiotic is difficult, even when evidence points to a bacterial infection. I am thinking of infections such as otitis media, when even a culture may not grow the responsible organism. On the other hand, there are times when one may want to start treatment pending completion of laboratory studies. Under such circumstances, as with suspected meningitis, it would not be improper to administer multiple antibiotics.

In conclusion, I would like to simply reiterate that before one yields to the premature urge to give antibiotics to

a child with a respiratory infection, it is wise to stop and consider that the cause is viral in the vast majority of such cases. Furthermore, much of what seems to be viral is actually allergic. Then, as a final discouragement to the overuse of these drugs, it should be remembered that they are not indicated prophylactically except in certain limited and sharply defined situations. With such matters in mind, the conscientious physician can cut the antibiotic intake of his patients to a sensible minimum level, lower the cost of their medical care, and reduce the occasional hazard and inconvenience associated with the giving of antibiotics.

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