# Current and Continuing Controversies Associated with the Diagnosis and Management of Group A Streptococcal Infections

**Edward L. Kaplan, M.D.**

*Professor of Pediatrics, World Health Organization Collaborating Center for Reference and Research on Streptococci*
*Department of Pediatrics, University of Minnesota Medical School, Minneapolis, Minnesota*

Group A beta hemolytic streptococcal upper respiratory tract infections are among the most common bacterial infections, especially in the pediatric population. In most industrialized countries the incidence of non-suppurative sequelae following these infections has fallen during the past four or five decades, but a significant potential for medical and public health problems remains in these countries. Furthermore, these sequelae remain major problems in the industrializing countries which constitute approximately two- thirds of the world's population. In contrast to predications at the time of the clinical introduction of antibiotics, current data suggest that the number of streptococcal upper respiratory tract infections likely have not been reduced. Significant clinical and basic science controversies remain incompletely addressed. Because of this, some have suggested that primary care physicians (pediatricians, internal medicine specialists, family practitioner) manage streptococcal pharyngitis no differently now than was done fifty years ago.

Pediatricians remain unable to accurately diagnose these infections clinically. Not only are the frequently mentioned clinical signs and symptoms controversial, but attempts to construct and successfully implement clinical algorithms also have not been document ably successful. Clinical differentiation of the very perplexing group A streptococcal upper respiratory tract carrier state remains an enigma.

Because of the difficulties encountered with accurate clinical diagnosis, the role of the clinical microbiology laboratory assumes increased importance. Yet, aspects of this approach are also controversial. While the classical throat culture remains the "gold standard" for identifying these organisms from swabs from the upper respiratory tract, the introduction of rapid antigen detection tests has provoked additional controversy. Although their specificity may sometimes be above 95% (depending on the test used), the sensitivities range from less than 50% to more than 90%; false negatives are a documentable problem. Antibodies to extracellular antigens of the group A streptococcus (ASO and anti-DNase B), while essential in the diagnosis of sequelae such as rheumatic fever and acute post streptococcal nephritis, have little or no role in the management of acute pharyngitis. However, they continue to be incorrectly used by clinicians in some parts of the world.

If aspects of the clinical and laboratory diagnosis of group A beta hemolytic streptococcal upper respiratory tract infections remain problematic, antibiotic therapy is even more controversial. While there has never been a clinical isolate of this organism that even approaches resistance to penicillin (the MIC has not changed in more than seventy years), changes in macrolide resistance have become important considerations for eradication of the organism in many parts of the world. Yet, newer macrolides, some being used for abbreviated courses of therapy,

have been introduced and promoted. Data resulting from studies of their microbiological efficacy have been debated. The concept of abbreviated courses of these often more expensive antibiotics continues to provoked disagreement.

Thus, a common infection, one which has been considered almost a nuisance in many parts of the world, continues to lead to disagreement among clinicians as well as public health authorities. New and convincing data are needed and novel approaches will be required to control these prevalent, but often serious problems.