AAOS Now

AAOS releases new statement on antibiotics after arthroplasty

By Mary Ann Porucznik

Comprehensive "information statement" puts patient safety first

In February 2009, the AAOS Board of Directors approved the release of the information statement "Antibiotic Prophylaxis for Bacteremia in Patients with Joint Replacements." The new statement asserts that " *Given the potential adverse outcomes and cost of treating an infected joint replacement, the AAOS recommends that clinicians consider antibiotic prophylaxis for all total joint replacement patients prior to any invasive procedure that may cause bacteremia* ."

Because this information statement replaces two previous "guidelines" and because several AAOS members have raised questions about the statement, *AAOS Now* recently interviewed **Terry A. Clyburn, MD**, a member of the Patient Safety Committee who was involved in its development.

AAOS Now: Why is this called an "information statement," rather than a guideline?

Dr. Clyburn: With the increased emphasis on evidence-based medicine, the AAOS has adopted strict procedures for developing clinical guidelines. For example, AAOS guidelines are prepared by a specific guidelines work group under the Guidelines and Technology Oversight Committee using a process of systematic review. Criteria for inclusion are determined in advance, a comprehensive literature search is conducted, and the quality of each study is rated. The final recommendations are, we hope, based on strong enough data that members could use them as a practice standard.

Even though the previous statements, which were developed in conjunction with the American Dental Association (ADA) and the American Urologic Association (AUA), were called guidelines, they did not meet the Academy's current criteria for evidence-based guidelines.

AAOS Now: If this statement wasn't developed according to those procedures, who did prepare it, and what procedures did they follow?

Dr. Clyburn: The new statement was developed by the AAOS Patient Safety Committee, which

was tasked to review and update the previous information. We contacted both the ADA and the AUA and found that they were independently updating their statements on antibiotic prophylaxis. But when we received copies of their final product, the committee couldn't agree with the recommendations.

AAOS Now: Why not?

Dr. Clyburn: The ADA statement included several good studies—and some quite old—that looked at the bacteria that produce bacteremia after dental procedures. These studies said that the bacteria are unique to the oral cavity and would not be the type found in an infected total joint. Because the ADA found no medical evidence that a total joint infection could come from an oral procedure, they concluded patients didn't need to take antibiotic prophylaxis.

The AUA revised statement is a 44-page document that does not recommend routine use of prophylactic antibiotics for total joint replacement patients undergoing urologic procedures with certain exceptions. We felt the document length and potential confusion of the recommendations were such that it would not be useful information for the practicing orthopaedist.

Although it is true that no medical evidence exists to support an increased risk of total joint infection in patients undergoing either oral or urologic procedures, neither is there evidence that these patients are not at risk for bacteremia that could result in total joint infection.

We also considered the risk of a single, low-dose antibiotic for the patient, particularly with regard to the potential of such a dose contributing to the development of resistant organisms. Because the data could be interpreted either way and because the antibiotic risk was low, we decided we could not support a recommendation for no antibiotics, particularly when we considered the devastating effect of an infected prosthesis and the costs of treating it.

Finally, the AAOS has received numerous inquiries in the last 5 years regarding other types of surgical procedures and the possibility of these surgeries resulting in total joint infection. But in these areas, there is almost no data at all. As a result, the committee decided that the best course of action was to produce an information statement that would include basic information, cover all types of procedures that might warrant antibiotic pro-phylaxis for total joint patients, and might be helpful to the practitioner in making clinical decisions.

AAOS Now: Do the recommendations apply to all patients with a joint replacement, regardless of the joint? Is there any time limit after which no antibiotic prophylaxis would be needed?

Dr. Clyburn: Most data, of course, relate to hip or knee replacements; no specific data are available covering joint replacements in the finger, elbow, ankle, or shoulder.

Because the data don't exist, the decision to offer prophylactic antibiotics prior to a procedure must be made by the practicing physician based on all of the patient risk factors, including age,

comorbidities, disease, level of immunocompromise, and type of procedure being performed (Table 1). In some cases, not administering antibiotic prophylaxis may be appropriate; in other cases, one might be called for even if the joint isn't normally at high risk for infection.

The original recommendation to stop prophylaxis after 2 years was based on a single study conducted in 1986. Although the risk might be highest during the first 2 years, the committee found reasonable data to support the belief that bacteremia from oral procedures may result in total joint infections even several years later. That's why the recommended limit was removed.

Again, we wanted to convey that the surgeon and others involved in patient care must give due consideration to the need for antibiotic prophylaxis for every patient with any total joint replacement, particularly if the patient has additional risk factors. The data points we provided are simply to aid in medical decision-making.

AAOS Now: Are the antibiotic choices (Table 2) in a preferential order?

Dr. Clyburn: No, and they are not significantly changed from prior recommendations, which were developed by a team of dentists, orthopaedic surgeons, and an infection disease consultant. Much of the table is based on recommendations from each specialty, so AAOS members may not be familiar with the prophylaxis listed. Again, they are options—information to consider.

AAOS Now: How do you suggest AAOS members use these recommendations?

Dr. Clyburn: I'd suggest that they print them out and just keep them in the office as a reference.

Then, if a patient asks about prophylactic antibiotics before scheduling another type of procedure, the recommendations will be handy.

Editor's Note: In 2011, the AAOS information statement "Antibiotic Prophylaxis for Bacteremia in Patients with Joint Replacements" was replaced by a joint AAOS-American Dental Association Clinical Practice Guideline on Prevention of Orthopaedic Implant Infection in Patients Undergoing Dental Procedures

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