New Guidelines Aim To Reduce Joint Replacement Infections

Of the one million people each year who get hips and knees replaced, as many as 20,000 will get an infection in the new joint, a number that is expected to increase in the next 20 years. Multi-specialty teams need to work together to reduce disability, death and costs associated with the ever-growing number of these prosthetic joint infections, note the first guidelines on the topic being released by the Infectious Diseases Society of America (IDSA).

"There are very few things that improve quality of life as much as joint replacement, but one to two percent of the time the new joint can become infected, even when precautions are taken," said Douglas R. Osmon, MD, associate professor of medicine in the division of infectious diseases at Mayo Clinic, Rochester, Minnesota. "There are many different ways to treat these infections to achieve the same outcome. The guidelines provide a framework to help multidisciplinary teams choose the best method of diagnosis and treatment for each patient."

Hips, knees and other joint replacements – such as shoulders and elbows – can become infected during the surgery or months or even years later. The guidelines, which are being published in the journal *Clinical Infectious Diseases*, outline the evidence and opinions regarding methods that are appropriate to diagnose the infections early and treat them most effectively, according to patients' specific situations. Most infections require long courses of antibiotics and surgery, which can range from washing out the infected area, to removal and replacement of the joint, to permanent removal of the prosthesis, to amputation.

Multidisciplinary teams should include an orthopedist and an infectious diseases specialist, as well as other specialists on a case-by-case basis. For instance, if the patient is older and has heart disease, an internist should be involved, and if the surgical wound is difficult to close, a plastic surgeon should be consulted, said Dr. Osmon. In rural areas with few specialists, doctors should consider consulting with infectious diseases specialists or orthopedists at referral centers. The guidelines describe the best methods for diagnosis of prosthetic joint infections. These infections can be difficult to diagnose, and not all are obvious, notes Dr. Osmon. Also, problems with joint replacements – particularly loosening of the prosthesis and pain – may be caused by infection or by problems in the materials in the device itself.

Among the recommendations in the guidelines:

- Physicians should suspect a prosthetic joint infection in a patient who has any of the following: persistent wound drainage in the skin over the joint replacement; sudden onset of a painful prosthesis, or ongoing pain after the

prosthesis has been implanted, especially if there had been no pain for several years or if there is a history of prior wound healing problems or infections.
- In patients with prosthetic joint infections, those with a well-fixed prosthesis without an open wound to the skin who had surgery less than 30 days previously are likely candidates for debridement, which means re-opening the incision and cleaning out the wound.
- Those who have more extensive infection that has affected the bone and tissue may need to have the prosthesis replaced, either in the same surgery in which the prosthesis is removed, or in a later surgery.
- Patients who cannot walk and who have limited bone stock, poor soft tissue coverage and infections due to highly resistant organisms may need to have the implants permanently removed. In some cases the joint may need to be fused.
- Amputation of the limb may be necessary, but only as a last resort. Prior to amputation, the patient should be referred to a center with specialist experience in prosthetic joint infections, if his or her condition allows.
- Four to six weeks of intravenous or highly bioavailable oral antibiotic therapy is almost always necessary to treat prosthetic joint infections.

"The number of people suffering from prosthetic joint infections will continue to grow because, although we are getting better at preventing infection, that is countered by the increase in older and sicker people having joint replacement," said Dr. Osmon. The nine-member prosthetic joint infections guidelines panel comprises experts from the United States and Europe representing the infectious diseases and orthopedic specialties. In addition to Dr. Osmon, the panel includes: Elie F. Berbari, Anthony R. Berendt, Daniel Lew, Werner Zimmerli, James M. Steckelberg, Nalini Rao, Arlen Hanssen and Walter R. Wilson.

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