

Information Statement

Recommendations for the Use of Intravenous Antibiotic Prophylaxis in Primary Total Joint Arthroplasty

This Information Statement was developed as an educational tool based on the opinion of the authors. It is not a product of a systematic review. Readers are encouraged to consider the information presented and reach their own conclusions.

Background

Surgical site infections (SSI) are a major source of postoperative morbidity and increased health care costs in the United States. It is estimated that over 300,000 SSI occur annually, accounting for 17% of all health care associated infections (HAI).¹ It is estimated that in the United States, surgical site infections lead to an additional 900,000 hospital days each year-including 90,000 readmissions for treatment totaling over \$1.6 billion in hospital costs alone. Surgical site infections are the third most common hospital-associated infection, with a reported incidence of approximately 2% across surgical specialties.³ The risk of SSI following primary total hip and knee replacement are estimated to be approximately 1% nationally, varying by institution. SSI following total joint replacement are associated with an increased perioperative complication and mortality risk, increased length of stay, and doubled hospital costs.⁴

In response to inconsistent compliance with surgical infection prevention measures, the Centers for Medicare & Medicaid Services (CMS) and the U.S. Centers for Disease Control and Prevention (CDC) introduced the Surgical Infection Prevention project (SIP)⁶ in 2002. Experts in surgical infection prevention, hospital infection control, and epidemiology collaborated to develop performance measures to help reduce morbidity and mortality related to surgical site infections in the Medicare population. From SIP, the Surgical Care Improvement Project (SCIP)⁷ was developed in 2006 incorporating these measures and defining the appropriate selection, timing, and duration of prophylactic antibiotic administration.

As an active participant in this process, the American Academy of Orthopaedic Surgeons (AAOS) has helped enhance surveillance of three quality measures nationally related to infection prevention. Specifically, the AAOS addresses the proportion of orthopedic surgery patients who:

1. Receive prophylactic antibiotics consistent with current recommendations
2. Receive prophylactic antibiotics within one hour prior to surgical incision
3. Have prophylactic antibiotics discontinued within 24 hours following the end of surgery

Inappropriate use of antibiotics contributes to antibiotic resistance and increases the risk of opportunistic infections. It also increases the risk of adverse drug reactions and increases healthcare costs. While no set of prevention measures can be expected to eliminate the risk of SSI, recent studies indicate that surveillance and compliance with such measures can significantly reduce their incidence and impact.^{2,4,5}

References:

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