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F- 1 - PROPH ABX FOREFOOT

F- 1 - Are prophylactic perioperative antibiotics required for isolated forefoot procedures, such as hammertoes?

Response/Recommendation:

Administration of perioperative antibiotics is not indicated for elective forefoot procedures.

Strength of Recommendation: Moderate

Rationale:

One high quality and one moderate quality prospective randomized control studies have found that there is no significantly different infection rate in patients who received perioperative antibiotics compared to those who did not receive antibiotics.^{1,2} There are multiple other low-quality studies to support the latter finding also.

A prospective randomized controlled trial of 100 adults undertaking toe fusion with K-wires revealed no significant difference in the infection rate between group that received prophylactic antibiotics (6.2%) versus group that did not receive antibiotics (1.9%)¹. A recent multicenter, double-blinded, randomized clinical trial of 500 patients undertaking removal of orthopedic implants of lower extremity from 19 hospitals in the Netherlands showed no significant difference between group that received a single preoperative dose of intravenous cefazolin (13.2%) compared to the group that received saline (14.9%).²

In their retrospective analysis of 555 patients who underwent elective foot and ankle surgeries, Zgonis et al reported 1.9% infection rate in those who received preoperative antibiotic, compared to 1.4% in patients who did not receive preoperative antibiotics. They concluded that prophylactic intravenous antibiotic use in routine elective foot and ankle surgery is not warranted.³

Based on systematic review of literature, American College of Foot and Ankle Surgeons and the the podiatry society have made a recommendation that although there is little to no empiric evidence to support administering prophylactic antibiotics in elective foot and ankle surgical procedures, antibiotics should be considered.^{4,5} Their conclusion was that there is a relative divide between empirical science and common practice. Despite the absence of evidence to support the use of prophylactic antibiotics, it is nevertheless widely used and is a requirement of most hospital systems to satisfy quality measures. They justified the practice as being an intervention without a significant risk. However, the cost to the healthcare system or the potential for the emergence of resistant organisms was not considered in their 2015 and 2017 statements.^{4,5}

Orthopaedic foot and ankle surgeon's questionnaire study has shown that majority (75%) of surgeons use prophylactic postoperative oral antibiotics. Most surgeons (69%) prescribed antibiotic to fewer than 25% of patients, although 16% prescribed for all elective cases. The finding of the questionnaire was that there was no significant difference in surgical site infection rate among the patients of surgeons who prescribed antibiotics versus those who did not prescribe.⁶ Another questionnaire study showed that 25% of foot and ankle fellowship trained orthopaedic surgeons would administer perioperative antibiotics for foot and surgeries that require Kirschner wire fixation.⁷

In the 2017 CDC Guidelines for the Prevention of Surgical Site Infections, while they did not find enough data to comment on intraoperative redosing of parenteral antibiotics for the prevention of SSI, they found category 1A, high quality evidence that antimicrobials do not need to be administered after the surgical incision is closed in the operating room, even if a drain is left in place. (8)

There is no scientific evidence to support administration of prophylactic IV antibiotics in elective forefoot surgeries. However, lack of high quality clinical study, administration of perioperative antibiotics as a quality measure for most hospital systems and being considered as a common practice have encouraged some surgeons to administer perioperative antibiotics for forefoot surgeries.

References:

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8. Sandra I. Berríos-Torres, MD¹ ;Craig A. Umscheid, MD, MSCE² ;Dale W. Bratzler, DO, MPH³ ;et al. for the Healthcare Infection Control Practices Advisory Committee. Centers for Disease Control and Prevention Guideline for the Prevention of Surgical Site Infection, 2017. *JAMA Surg* .791-784:(8)152;2017 ..