

INBRIEF

Summarizing the Evidence

Post-Operative Prophylactic Antibiotics for Patients Undergoing Hip Fracture Repair Surgery or Hip Arthroplasty: A Review

Key Messages

- The evidence is inconclusive regarding the clinical effectiveness of prophylactic antibiotics for patients following hip fracture repair surgery or hip arthroplasty.
- Two systematic reviews (based on low-quality studies) did not find a statistically significant difference in infection rates for patients who received post-operative prophylactic antibiotics compared with those who did not.
- One retrospective cohort study (with inherent limitations) found a statistically significant reduction in infection rates following hip arthroplasty in patients who had an elevated risk of infection to begin with (e.g., diabetes, chronic kidney disease, smoking) and who received prophylactic antibiotics compared with those who did not.
- The results need to be interpreted with caution considering the limitations.
- No evidence-based guidelines were identified regarding the use of prophylactic antibiotics for patients following hip fracture repair surgery or hip arthroplasty.

Context

As the population continues to age, the annual number of hip fractures is expected to increase. It is anticipated to exceed six million globally by the year 2050. It is estimated that one-third of fracture patients require hip replacement — also known as hip arthroplasty. Hip arthroplasty is a surgical procedure

to replace a worn out or damaged hip joint and involves replacement of the joint with an artificial joint, or prosthesis. It may be used to treat patients with hip fractures or those with hip pain from other causes (i.e., where non-surgical treatment strategies have failed).

With surgery, there is a corresponding surgical site infection risk. Antibiotics may be prescribed prophylactically following surgery with the aim of reducing the risk of infection, but the clinical effectiveness of this is unclear.

Technology

Various antibiotics may be prescribed prophylactically following hip fracture repair surgery — the internal repair of bones — or hip arthroplasty as a means to try to decrease the risk of surgical site infection. Different sources have provided different estimates on the risk of infection following surgery (with some examples ranging from 0.4% to 4.97%). However, the risk-to-benefit profile of prescribing prophylactic antibiotics is unclear. With a growing emphasis on antimicrobial stewardship and concern regarding the potential development of antibiotic-resistant pathogens, there may be reason to consider not prescribing antibiotics prophylactically.

Of note, if prophylactic antibiotics were not prescribed and a patient did go on to develop a surgical site infection, the patient would receive appropriate treatment at that time.

Issue

A review of the clinical effectiveness and guidelines regarding prophylactic antibiotics following hip fracture repair or hip arthroplasty will help to inform optimal prescribing decisions.

Methods

A limited literature search was conducted of key resources, and titles and abstracts of the retrieved publications were reviewed. Full-text publications were evaluated for final article selection according to predetermined selection criteria (population, intervention, comparator, outcomes, and study designs).

Results

The literature search identified 623 citations, with three additional grey literature publications. After screening the abstracts, 26 were deemed potentially relevant, and three met the inclusion criteria for this report – two systematic reviews and one non-randomized study.

No guidelines were identified regarding the prophylactic use of antibiotics following hip surgery.

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