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Outcomes of irrigation and debridement in periprosthetic joint infections using antibiotic-

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Outcomes of Irrigation and Debridement in Periprosthetic Joint Infections Using Antibiotic-Impregnated Calcium Sulfate Beads

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I (and my co-authors) have nothing to disclose

BACKGROUND

- Periprosthetic joint infections (PJI) are an uncommon, but devastating complication of joint arthroplasty
- Two types of acute infections: **early post-operative** vs **hematogenous spread to the joint**
- Multiple treatment options available

BACKGROUND

- Polymethylmethacrylate (PMMA) beads have been utilized as an adjunctive therapy but have several pitfalls
- **Antibiotic impregnated calcium sulfate beads (AICS)** are an alternative option
- Positive outcomes in both trauma and foot and ankle literature
  - Wenke et al. 2005
- Current arthroplasty literature suggests the AICS beads do not improve outcomes
  - Della Valle et al. 2017

PURPOSE

- To evaluate the **effect of bead placement in acute PJI** and to delineate populations (acute post-op vs acute hematogenous vs chronic) that may benefit most

METHODS

- Retrospective review of patients who previously underwent joint arthroplasty requiring a revision surgery that included the use of antibiotic-impregnated calcium sulfate beads
- Primary outcome measure: **implant retention**
- Secondary outcomes: type and quantity of antibiotics used, number of AICS beads used and organism isolated on culture

RESULTS

- **Overall implant retention rate: 72% (47/65)**
- Acute post-op vs chronic: **84%** (33/39) vs **43%** (7/16)
  - **p-value = 0.02**
- Acute post-op vs hematogenous: **84%** (33/39) vs **70%** (7/10)
  - p-value = 0.287
- TKA vs THA: **85%** (33/39) vs **54%** (14/26)
  - **p-value = 0.006**

RESULTS

- **TKA cohort**
  - Acute post-op vs chronic: **92%** (24/26) vs **63%** (5/8)
    - **p-value = 0.04**
- **THA cohort:**
  - Acute post-op vs chronic: **69%** (9/13) vs **25%** (2/8)
    - **p-value = 0.048**
- Neither subtype, TKA or THA, showed any difference when acute post-op infections were compared to acute hematogenous infections

Conclusion

- The use of AICS beads does appear to provide a benefit in select PJI patients
- Favorable rates of implant retention in patients presenting with acute PJI
- Overall, TKA's have a higher rate of retention when compared to THA
- AICS beads have the added benefit of being bioabsorbable
- Results differ from prior studies, warranting further investigation

THANK YOU!