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

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**Recommended Citation**
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!