## Shoulder Arthroplasty In The Management Of Native Shoulder Joint Infections Has A **High Complication Rate And Poor** Functional Outcome – A Systematic Review.

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## Disclosures

• All authors involved in the production of this research declare no conflicts of interest.

# Background

- Septic arthritis of the shoulder accounts for up to 3-15% of all cases of septic arthritis.
- Cutibacterium acnes (C. acnes) and coagulase-negative staphylococcus (CoNS) are most common pathogens.
- 40% of patients achieve eradication of infection following single arthroscopy surgery.
- 37% of patients have symptoms or complications even after eradication.
- The aim of this study was to systematically review the available literature and to <u>report</u> the outcomes of patients undergoing shoulder arthroplasty following native glenohumeral septic arthritis.

## Methods

- PRISMA guidelines
- Registered on *PROSPERO*
- Searches May & June 2022
- Eligibility
  - Clinical studies, case series or case reports in English language
  - Patients age >16years undergoing
    - total shoulder arthroplasty, reverse shoulder arthroplasty, hemiarthroplasty or long-term spacer
  - Patients with sequelae of GHJ infection.
  - Outcomes included
    - function scores, range of motion, reinfection or complications.

## Results - Summary

- 14 studies eligible for inclusion
- 136 patients
  - 60% male
- Mean age 56-72 years
- Mean follow-up 20.5 8.2 years

- Primary infections in 37%
  - Haematogenous spread
  - Shoulder injections/aspirations
  - Unspecified causes
- Secondary infections in 63%, following
  - RCR
  - Fracture fixation or
  - Other arthroscopic surgery

## Results

- Commonest organisms included:
  - MSSA 12-91%
  - CoNS 7-38%
  - C. acne 9-40% and
  - S. epidermidis 18-57%
- 56% underwent a 2 stage procedure,
- 34% underwent a single stage and
- 10% opted not to proceed to a second stage

## **Results** - Complications

#### • **26%** overall complication rate.

- Complications following shoulder arthroplasty included:
  - 5.7% loosening,
  - 4.5% acromial fractures,
  - 4.5% periprosthetic fractures and
  - 4.5% joint instability.

## **Results** - Functional outcomes

#### • Post-op PROMs

- Mean CM score 38-56.2 and
- Mean ASES score 57.6-78.4.
- Post-op Range of Motion
  - Mean flexion 82-143 degrees
  - Mean external rotation 18-36 degrees

### **Results** - Reinfections

#### • 2.3% overall reinfection rate:

- 4.6% reinfection in single stage group and
- **1.3%** reinfection in two stage group.

## Limitations

- Majority of studies were retrospective
- MINORS grading ranged from 7 to 22
- Studies contained low numbers
- Short or medium term follow up only
  - Long term follow up is required to gain a fair reflection on the successful eradication of infection
- Data generally included both native shoulder infections and PJI with difficulty separating the data.

## Conclusions

- Shoulder arthroplasty in following GHJ septic arthritis has a high complication rate (26%) & relatively poor functional outcomes.
- The reinfection rate maybe low in the short term.
- Longer term studies with larger participant numbers are required to ensure this low reinfection rate is maintained in the long term.
- Based on the findings from the review the authors recommend the following treatment algorithm (see next slide).



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