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Clínica Alemana - Universidad del Desarrollo

# Age Older Than 60 Years, Sepsis On Admission, and Glenohumeral Involvement Increase Short-Term Mortality in Patients With Septic Arthritis

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- No affiliations either conflict of interest

# Introduction

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Septic arthritis (SA) is considered a medical emergency due to its morbidity and mortality:

- Chondrolysis > 90% within 40 hours
- 10% prevalence of MRSA in SA worldwide in recent years
- 2.6% global mortality rate

Chile:

- Limited evidence on prevalence and microbiological agents
- No morbidity and mortality studies until now.

Wilson M et al,. Mayo Clinic Proceedings. 1990.
ESCEO, 2016
EULAR recommendations 2003
Bellamy N, et al. Cochrane Database Syst Rev, 2006.
AAOS Clinical Practice Guideline.

# Outcomes

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**Primary**:

Determine short-term (<90 days) mortality predictive factors (MPF) in septic arthritis (SA) and report postoperative adverse events at 1 year.

**Secondary**:

Descriptive analysis of isolated microbiology.

# Methods

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**Study design:**

- Descriptive and retrospective cohort

**Time period:**

- 2013 - 2024

**Where:**

- High complexity public hospital in Santiago de Chile

**Data collection:**

- Data obtained from medical records of all patients diagnosed with septic arthritis at admission, as well as from surgical protocols with a diagnosis of intra-articular infection

# Methods

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| Inclusion Criteria | Exclusion Criteria |
| --- | --- |
| - Age ≥ 15 years<br>- Joint fluid aspiration with ≥ 50,000 leukocytes + ≥ 50% PMNs<br>- Positive culture<br>- SA of the knee, shoulder, and/or hip | - Age <15 years<br>- Periprosthetic infection<br>- Previous joint surgery |

**Primary Diagnosis**

- Joint fluid aspiration > 50,000 leukocytes + ≥ 50% PMNs
- Microbiological positive culture

**Secondary/In-Hospital Diagnosis**

- Different medical condition from arthritis
- Sepsis or septic shock at admission

# Data Analysis

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**Recorded:**

- Affected joint
- Mortality ≤90 days from diagnosis
- Adverse event within one year → osteomyelitis, arthrodesis, amputation
- Culture positivity and microorganism isolation

**Statistical Analysis**

- T-student test for continuous variables and chi-square for categorical variables
- Ridge regression to identify risk factors associated with <90-day mortality, with their respective 95% CI and $p<0.05$
- Statistical significance was considered with $p<0.05$

# Results

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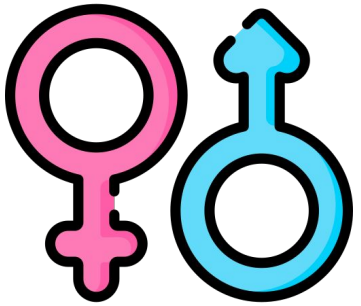
126 patients

Affected Joint

Follow up for 10 years



63% men
37% women

# Results

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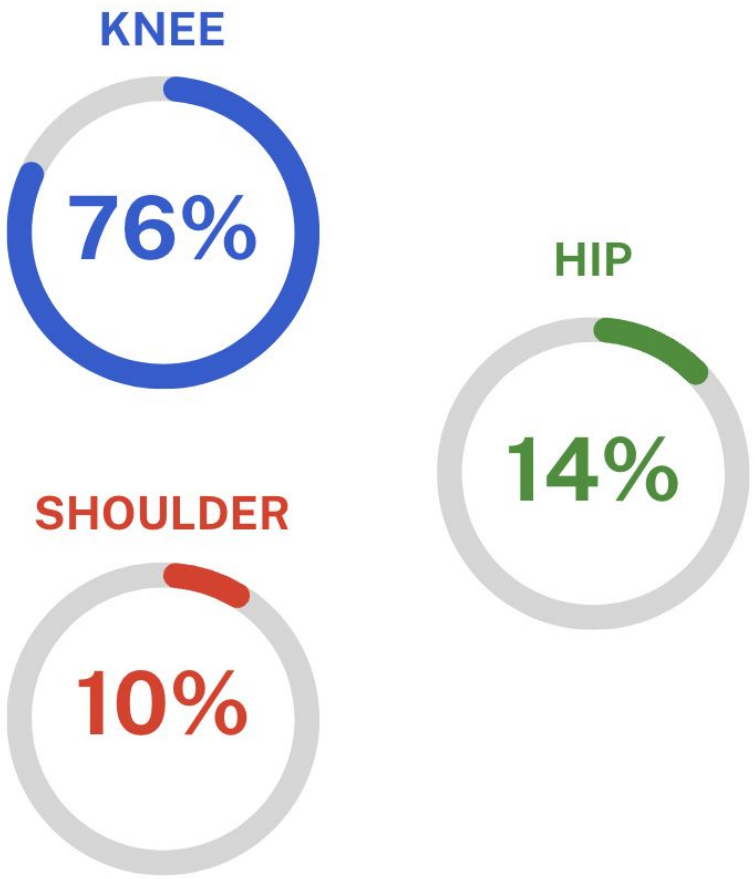
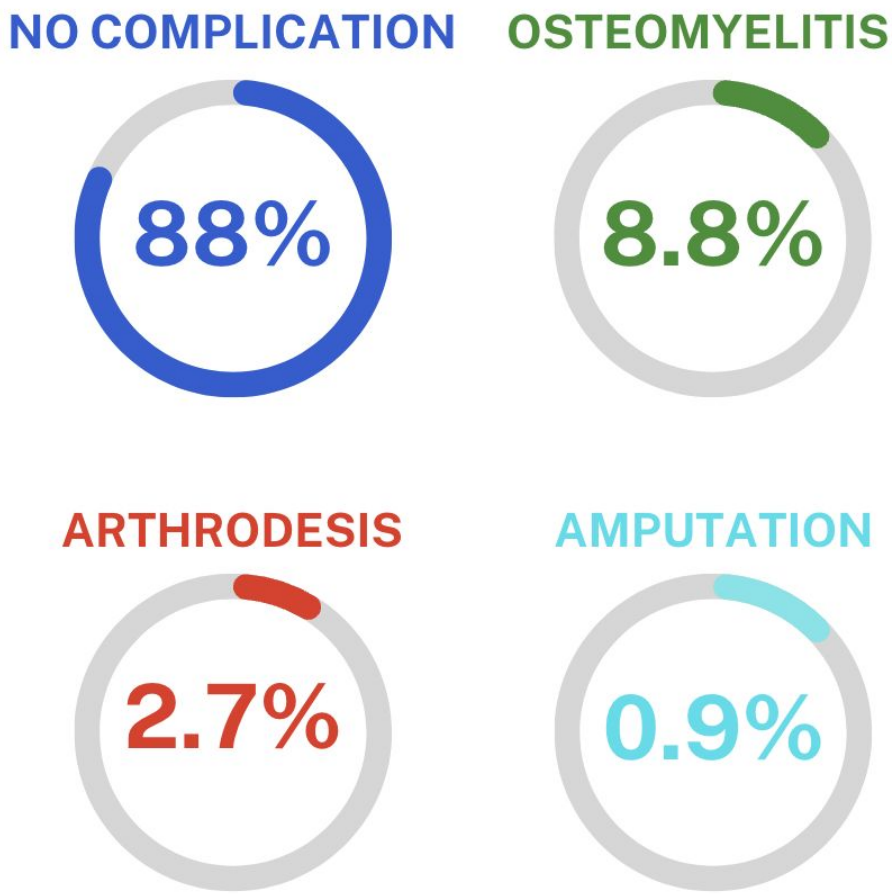
## Affected Joint




## Complications




*With no impact on mortality (p>0.05)

# Results

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- Mortality rate <90 days → **10.3%** (14 patients)
  - 42% MRSA

- Mortality Predictive Factors (MPF)
  - **Sepsis/septic** shock at admission (OR 27.15; IC 9.71-58.6; p<0.05)
  - **Age ≥60 años** (OR 2.3; IC 1.04-6.62; p<0.05)
  - **Shoulder SA** (OR 4.03; IC 1.36-13.50; p<0.05

# Isolated microbiology

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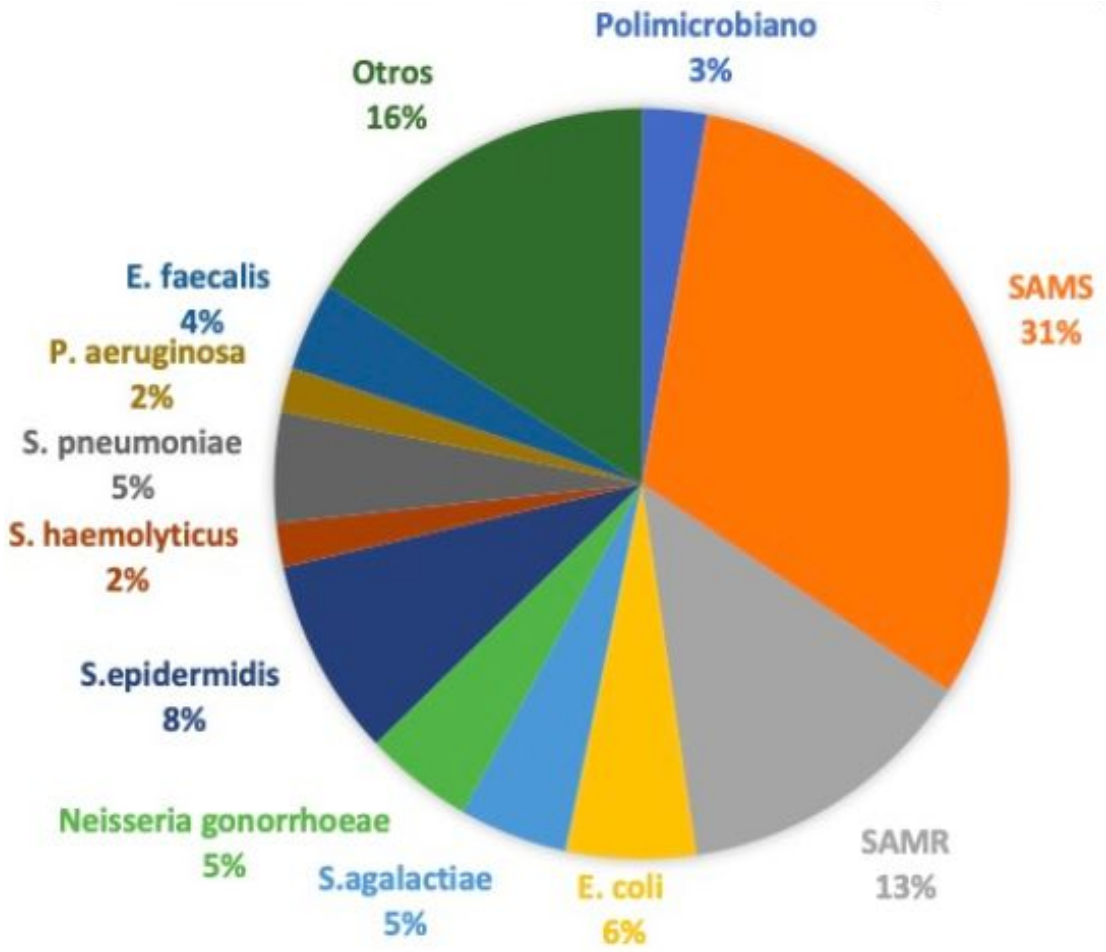
**GRAM Stain**

- Bacterias (+) 63%

**Standard Culture**

- Positivity: 83.33%
  - 31% MSSA
  - 13% MRSA
  - 5% N. gonorrhoeae




*With no impact on mortality (p>0.05)

# Discussion

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Significantly higher mortality <90 days ($p < 0.05$)

- Sepsis/Septic shock at admission
- Age ≥ 60 years
- Glenohumeral involvement

However, an increase in **comorbidities** was observed in deceased patients, without statistical significance due to the low case count, such as chronic liver disease and diabetes.

**Osteomyelitis** was the most frequent complication at one year (8.8%).

The prevalence of **MRSA** is similar to that reported in developed countries, opening the discussion on what should be the empirical therapy for SA in Chile.

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