# Knee arthrodesis in periprosthetic joint infection: a forgotten alternative for complex cases?

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## AIM

- **Periprosthetic joint infection is one of the most serious complications of total knee arthroplasty;**
- **Knee arthrodesis is a limb-salvage option, enabling infection control and providing a stable, weight-bearing extremity.**
- **The objectives of these studies were:**
  - analyze the outcomes of patients who underwent knee arthrodesis for periprosthetic joint infection at a tertiary centre between 2008 and 2022
  - identify risk factors for infection recurrence, failure of bone consolidation, need for additional surgical procedures, complications and mortality.

## METHODS

- **Retrospective, cross-sectional, observational study 114 patients with at least 1 year of follow-up;**
- **Data collection through review of clinical records and telephone questionnaires;**
- **Clinical, laboratory, microbiological and surgical variables were analyzed;**
- **Chi-square ($\chi^2$) test and Fisher's exact test for categorical variables;**
- **Student's t-test for continuous variables;**
- **Statistical significance at $p<0.05$ (two-tailed).**

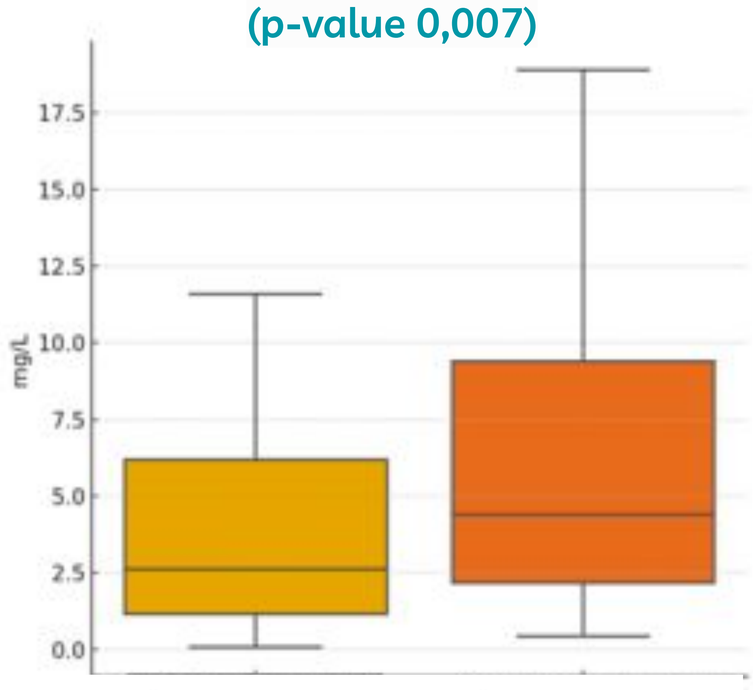
## RESULTS

### SAMPLE CHARACTERISTICS

| | |
|---|---|
| Age (mean) | 69,6 years |
| Sex (%) | 57% female |
| CCI | 3,2 |
| Microorganism (%)<br>*Staphylococcus aureus*<br>*Streptococcus agalactiae*<br>*Streptococcus epidermidis*<br>Others | <br>45 (39,5)<br>23 (20,2)<br>18 (15,8)<br>28 (24,5) |
| Arthrodesis (%)<br>- External fixation<br>- Nail<br>- Plate osteosynthesis | <br>100 (87,7)<br>6 (5,2)<br>8 (7) |
| Surgical reintervention rate | 35 (30,7) |
| Infection cure rate | 75,4% |
| Bone consolidation | 75 (77,3%) |
| Parker Mobility Score median) | 6,5 |

### C-REACTIVE PROTEIN

(p-value 0,007)




### INFECTION RECURRENCE

| | Yes (%) | No (%) | p value |
|---|---|---|---|
| Methicillin resistant | 18 (64,3) | 33 (45,8) | 0,049 |
| Arthrodesis<br>- External fixation<br>- Nail<br>- Plate | 23 (82,1)<br><br>0 (0,0)<br>5(17,9) | 67 (93,1)<br><br>2 (2,8)<br>2 (2,8) | 0,023 |

### SURGICAL REINTERVENTION

| | Yes (%) | No (%) | p-value |
|---|---|---|---|
| Male | 20 (57,1) | 23 (32,4) | 0,017 |
| *Staph aureus* | 22 (62,9) | 19 (26,8) | <0,001 |

### 1-YEAR MORTALITY

| | Yes (%) | No (%) | p value |
|---|---|---|---|
| Age (mean) | 77,6 | 68,7 | 0,011 |
| CCI (mean) | 4,6 | 3,2 | 0,005 |

## CONCLUSIONS

- **C-reactive protein (CRP) levels showed a significant decrease after arthrodesis ($p = 0.007$);**
- **Staphylococcus aureus was associated with surgical reintervention ($p < 0.001$);**
- **Infection recurrence was related to the type of arthrodesis ($p= 0.023$), being more common in patients with plate fixation, and to infections caused by methicillin-resistant organisms ($p = 0.049$);**
- **One-year mortality was significantly associated with older age ($p = 0.011$) and higher comorbidity index($p = 0.005$);**
- **Knee arthrodesis achieved a high rate of infection control and bone consolidation with a low complication rate;**
- **Despite surgical aggressiveness and loss of joint function, patients retained relative functional autonomy;**
- **Knee arthrodesis can be a viable surgical limb-salvage option in cases where the gold-standard treatment has failed.**

## REFERENCES

UNIDADE LOCAL DE SAÚDE COIMBRA