Early Multidisciplinary Response and Outcomes of DAIR in Acute Periprosthetic Joint Infection: A Single-Center Experience

Consorci Sanitari Integral

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Introduction & Aims

This study evaluated debridement, antibiotics and implant retention (DAIR) outcomes in acute periprosthetic joint infection (PJI), focusing on early surgery, coordinated multidisciplinary care, and surgeon specialization

Methods

- Retrospective study of acute PJI treated with DAIR (2023-2025).
- Multidisciplinary team (MDT) management.
- Outcomes: clinical success at latest follow-up.
- Time variables: symptom onset-to-DAIR and MDT assessement-to-surgery.
- Surgeon specialization: bone and joint infection specialists vs. other orthopaedic surgeons.

Clinical success definition

Absence of clinical signs of infection
No need for further surgery due to infection
No requirement for suppressive antibiotic therapy at latest follow-up

Results

82% Clinical success

51 patients were included. Most presented at least one EBJIS risk factor for DAIR failure. A rapid institutional response was observed.

Baseline characteristics of the study cohort (n = 51)

Variable	N=51
Age	76 years (63-81)
Sex	65% female
Surgical site	57% knee
	41% hip
	2% shoulder
ASA	51% 3, 47% 2
Comorbidities	Obesity 43.1%
	COPD* 13.7%
	IMST**3.9%

**COPD: Chronic Obstructive Pulmonary Disease **IMST: Immunosuppressive Therapy*

Variables between successful and failed DAIR procedures

Variables	IQR success VS failure (days)	P-value
Symptoms - DAIR	**6.5 vs 11**	0.085
MDT assessment - DAIR	**1 vs 2**	0.067

Days since appearance of symptoms and DAIR intervention when the final results were favorable vs. when not; and days since MDT assessment was carried out until DAIR when results were favorable vs when not

Bone and Joint infection surgeon involvement

Outcome	Bone and Joint infection surgeon	Other Ortho surgeons	P-value
Proportion of procedures	78%	22%	-
Clinical success rate	**85%**	72.7%	0.38

Most DAIR procedures (78%) were performed by BJI-specialized surgeons, with a higher, although non-significant, clinical success rate compared with other subspecialties (85% vs. 72.7%; p = 0.38).

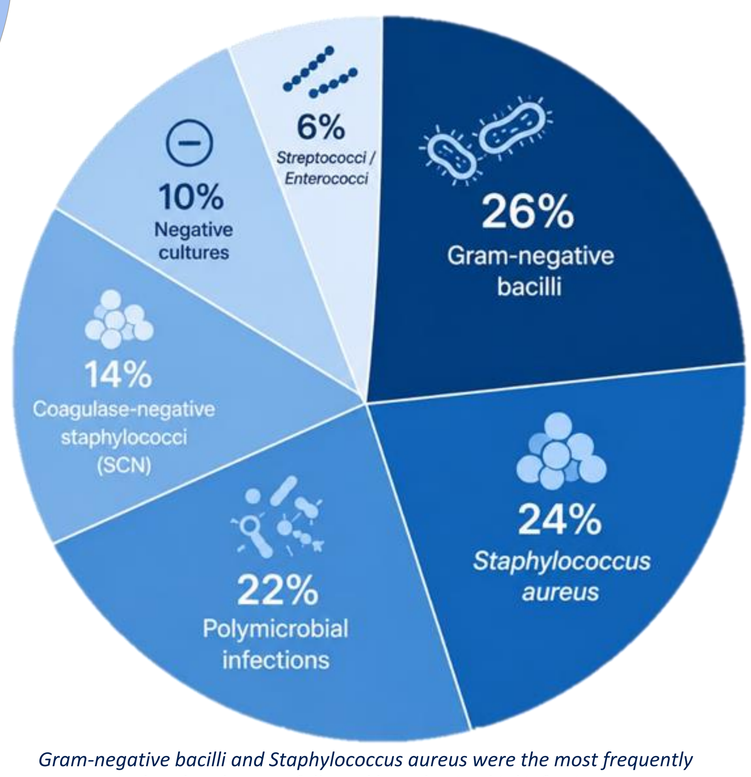
Time intervals from symptom onset and MDT assessment to DAIR.

Time interval	Days (median)	IQR
1st surgery-symptoms	25	18-36
Symptoms - DAIR	**7**	4-13.5
MDT assessment - DAIR	**2**	1-4.0

Overall treatment intervals.

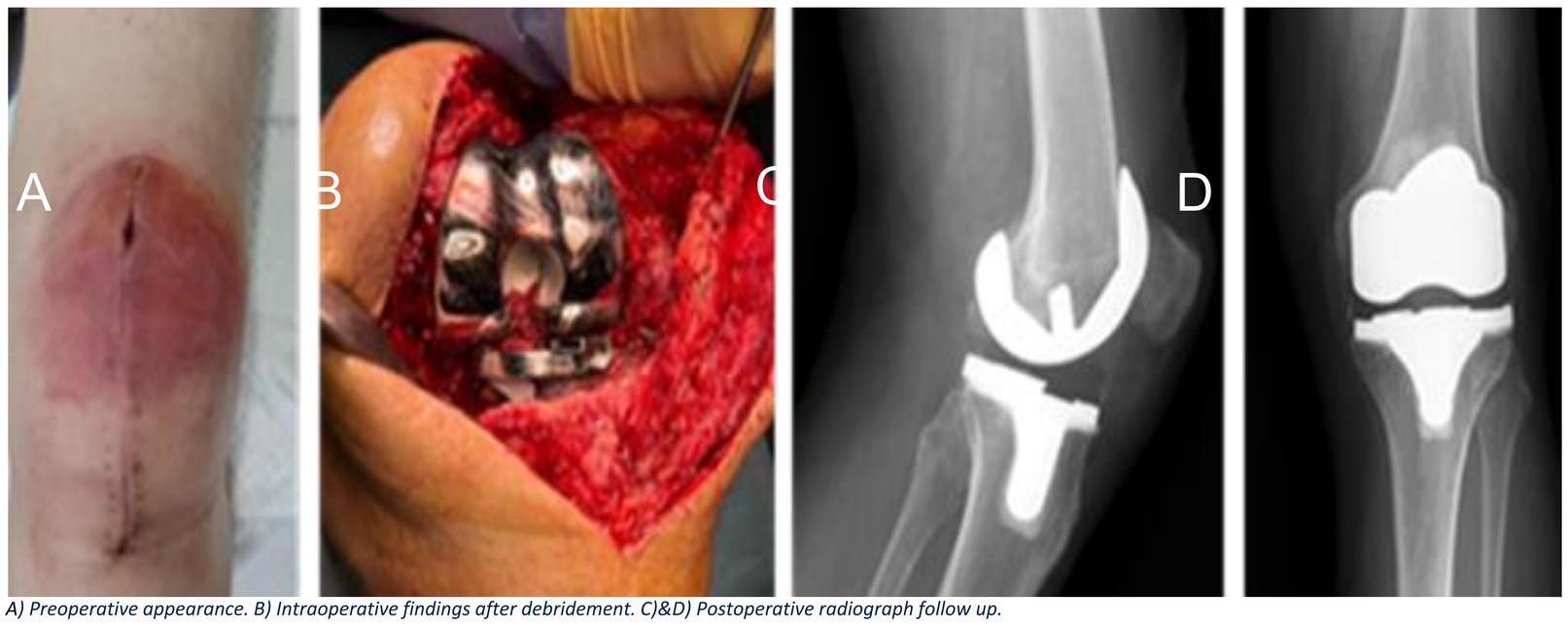
82% OVERALL SUCCESS RATE

Microbiology



Gram-negative bacilli and Staphylococcus aureus were the most frequently isolated pathogens, followed by polymicrobial infections.

Clinical case



A) Preoperative appearance. B) Intraoperative findings after debridement. C)&D) Postoperative radiograph follow up.

Conclusions

The high success rate may be related to multidisciplinary team management and a rapid institutional response, as reflected by the short response times.

Bibliography

Contact / Questions

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