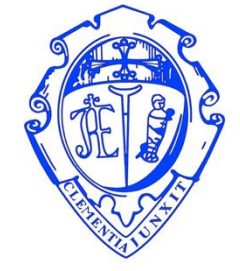


Early Multidisciplinary Management in Prosthetic Joint Infections Reduces Surgical Burden: The Pisa Osteoarticular Multidisciplinary Infection Team (POMIT) Experience



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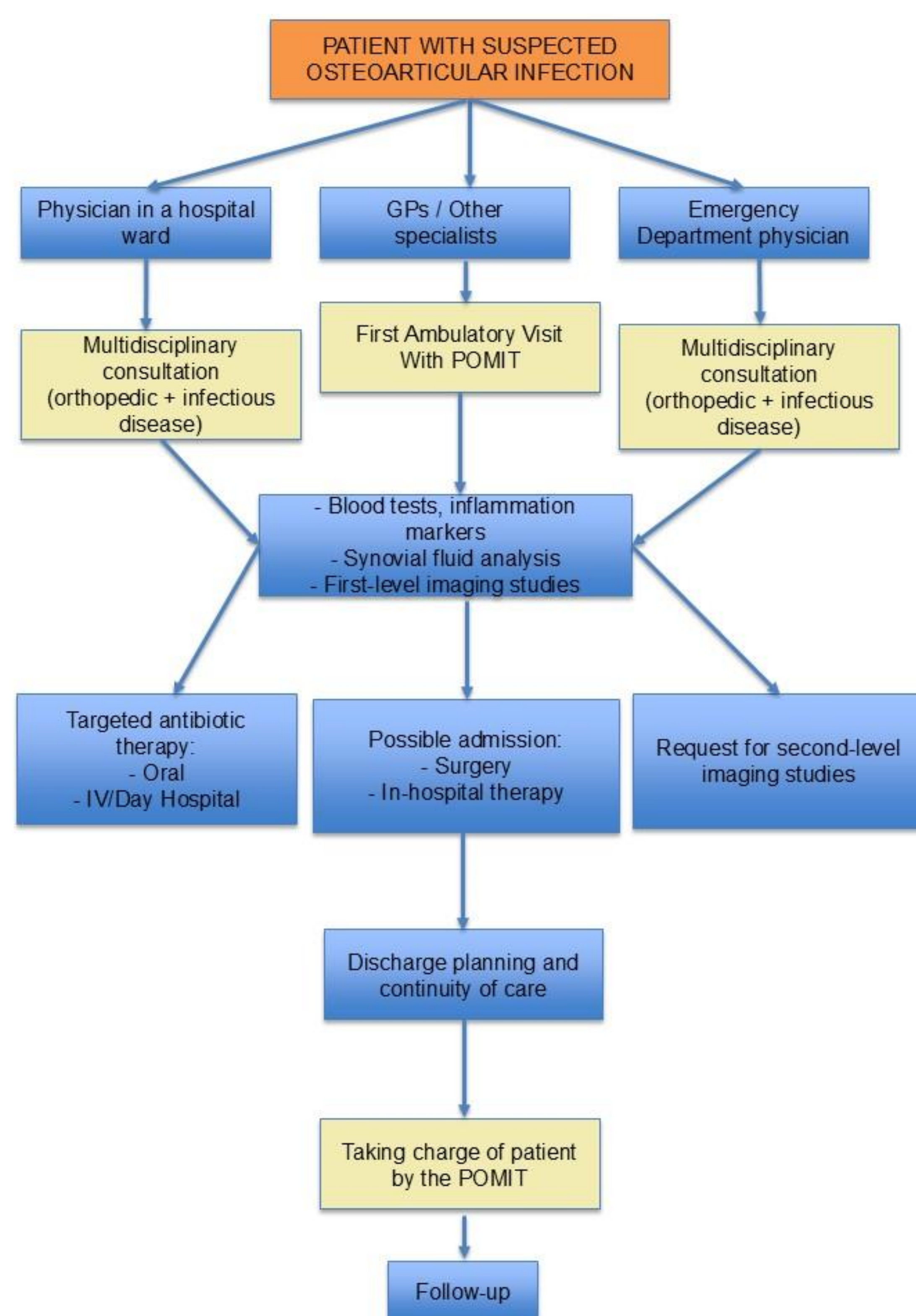
Introduction and Aim

Osteoarticular infections (OIs), including periprosthetic joint infections (PJI), fracture-related infections (FRI), septic arthritis (SA), and osteomyelitis (OM), are associated with high morbidity, complex management, and substantial healthcare burden. Their treatment requires dedicated and well-trained orthopaedic, infectious disease, and clinical microbiology specialists, with the ability to integrate surgical and antimicrobial strategies. We evaluate the clinical and surgical impact of a dedicated multidisciplinary infection team (*Pisa Osteoarticular Multidisciplinary Infection Team, POMIT*) in a tertiary hospital in the North-West of Tuscany (IT) on patients with OIs, with a focused analysis on PJIs.

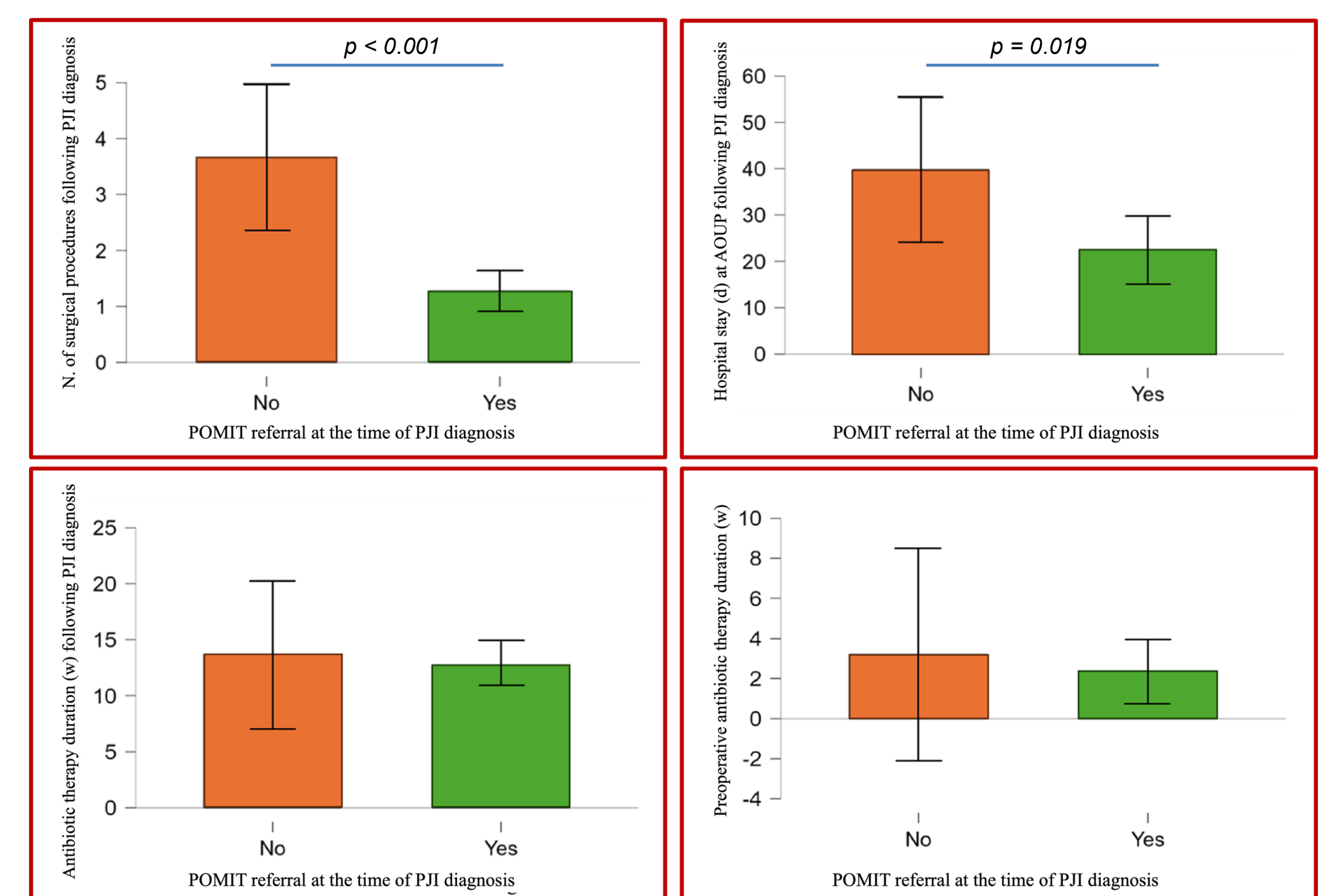
Methods

A retrospective cohort study was conducted at the University Hospital of Pisa (IT) between May 2025 and September 2025. Patients were included for suspected or confirmed OIs. Data collected have reported in **E-Poster EP190 (EBJIS 2026)**. Patients were managed through a structured multidisciplinary pathway. A subgroup analysis was performed in patients with PJIs, comparing early versus delayed referral to the POMIT team. Primary outcomes included the number of surgical procedures and the length of hospital stay (LOS); antibiotic therapy duration was analysed as a secondary outcome. A t-test has been performed to compare the means of number of surgical interventions, days of hospitalisation and antibiotic therapy duration between the two groups.

Flow-chart illustrating the POMIT pathway



Comparison of n° of surgical procedure, LOS and duration of antibiotic therapy in PJIs subgroup patients



	t	df	p	Mean Difference	SE Difference	95% CI for Mean Difference	
						Lower	Upper
Number of surgical procedures following PJI diagnosis	4.830	32	< .001*	2.394	0.496	1.384	3.403
Hospital stay (days) at AOUN following PJI diagnosis	2.470	31	0.019	17.227	6.976	3.001	31.454
Antibiotic therapy duration (weeks) following PJI diagnosis	0.358	32	0.723	0.939	2.623	-4.403	6.282
Preoperative antibiotic therapy duration (weeks)	0.435	28	0.667	0.850	1.956	-3.157	4.857

Note. Student's t-test.
* Brown-Forsythe test is significant (p < .05), suggesting a violation of the equal variance assumption

Results

The multidisciplinary pathway improved clinical organisation and standardised decision-making across the entire osteoarticular infection cohort.

In the PJI subgroup (35/102, 34,3%), early multidisciplinary management was associated with a significant reduction in needed surgical procedures, with a mean decrease of 2.39 interventions per patient ($p < 0.001$; 95% CI 1.38–3.40), and a significant reduction in hospital stay, with a mean decrease of 17.23 days ($p = 0.019$; 95% CI 3.00–31.45). No statistically significant differences were observed in antibiotic therapy duration ($p = 0.723$).

Conclusions

A structured, multidisciplinary approach may improve the management of PJIs and significantly reduce surgical burden and hospitalisation when applied early.

According to others' experience, the Multidisciplinary model in septic orthopaedic surgery represents a reproducible and effective strategy for optimising care for complex infections.