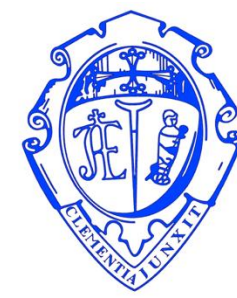




Impact of a Multidisciplinary Approach on Osteoarticular Infections: The Pisa Osteoarticular Multidisciplinary Infection Team (POMIT) preliminary data



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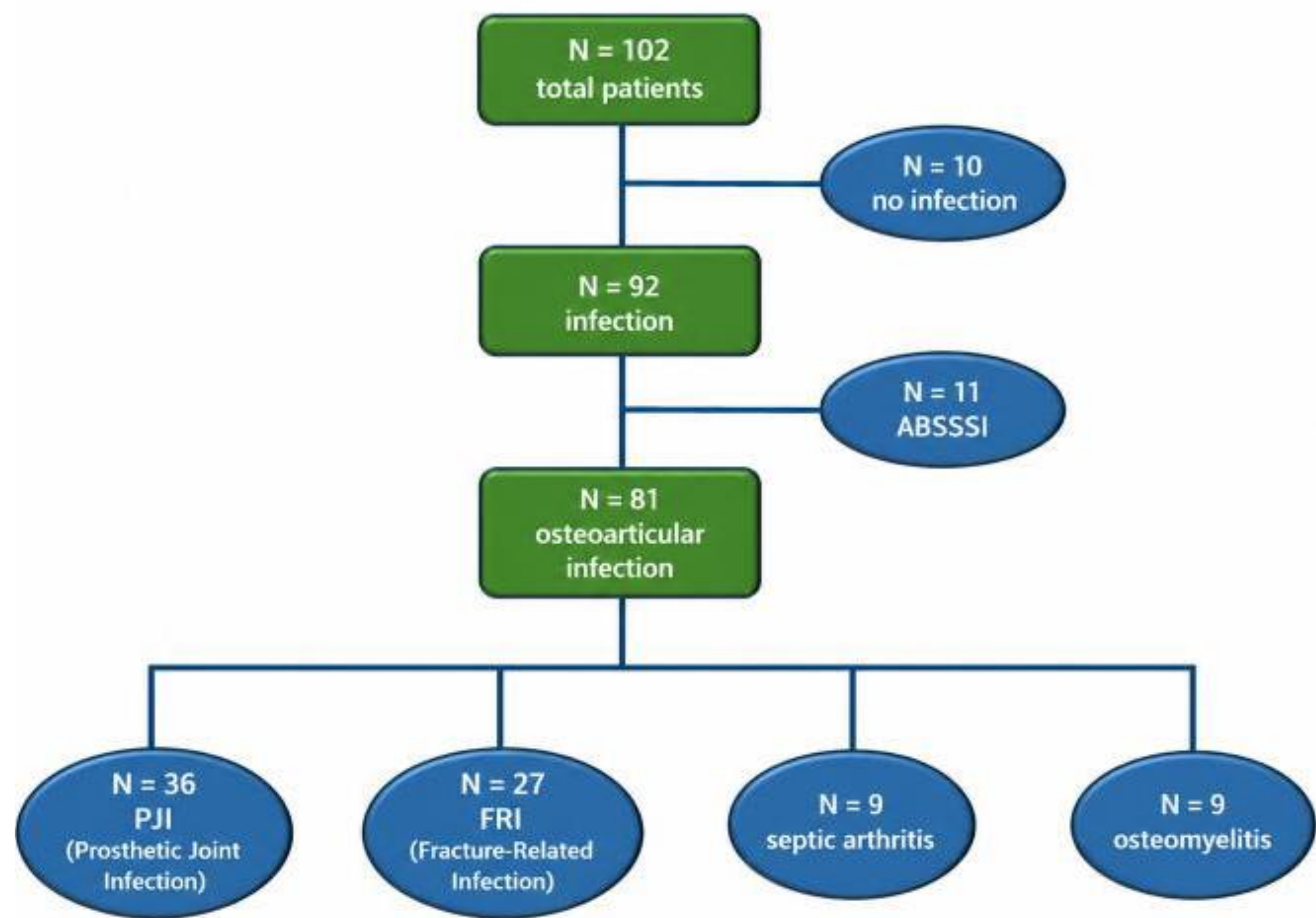
Introduction and Aim

Osteoarticular infections (OIs) represent a complex clinical challenge requiring coordinated multidisciplinary management. The Pisa Osteoarticular Multidisciplinary Infection Team (POMIT) was established to optimize diagnostic and therapeutic pathways. The aim of this study is to describe the clinical characteristics of the POMIT population, outline epidemiological features, report microbiological findings in infected patients, and analyze therapeutic strategies adopted within this multidisciplinary model.

Methods

A retrospective cohort study was conducted at the University Hospital of Pisa between May 2025 and September 2025. Patients were included for suspected or confirmed musculoskeletal infections. Data collected included demographic variables, infection types, epidemiological characteristics, microbiological isolates, and therapeutic approaches. Descriptive statistics were used to summarize findings.

General characteristics of observed patients



ABSSSI: Acute Bacterial Skin and Skin Structure Infections; PJI: Prosthetic Joint Infection; FRI: Fracture Related Infections

Comorbidities among the observed patients

Obesity	24.5%
Diabetes	17%
Cardiovascular Disease	44%
Active smoking	14.5%

Results

The cohort included 102 patients with a median age of 67 years (range 18–89), with male predominance (58.8%). Infection was confirmed in 81 patients (79.4%), while 11 (10.8%) had soft tissue infections and 10 (9.8%) had no infection. Among OIs, periprosthetic joint infections (PJI) accounted for 44.6%, fracture-related infections (FRI) for 33.4%, and both septic arthritis and osteomyelitis for 11% each.

Obesity was present in 24.5%, diabetes in 17%, cardiovascular disease in 44%, and active smoking in 14.5%. Median time to POMIT evaluation was 89 days.

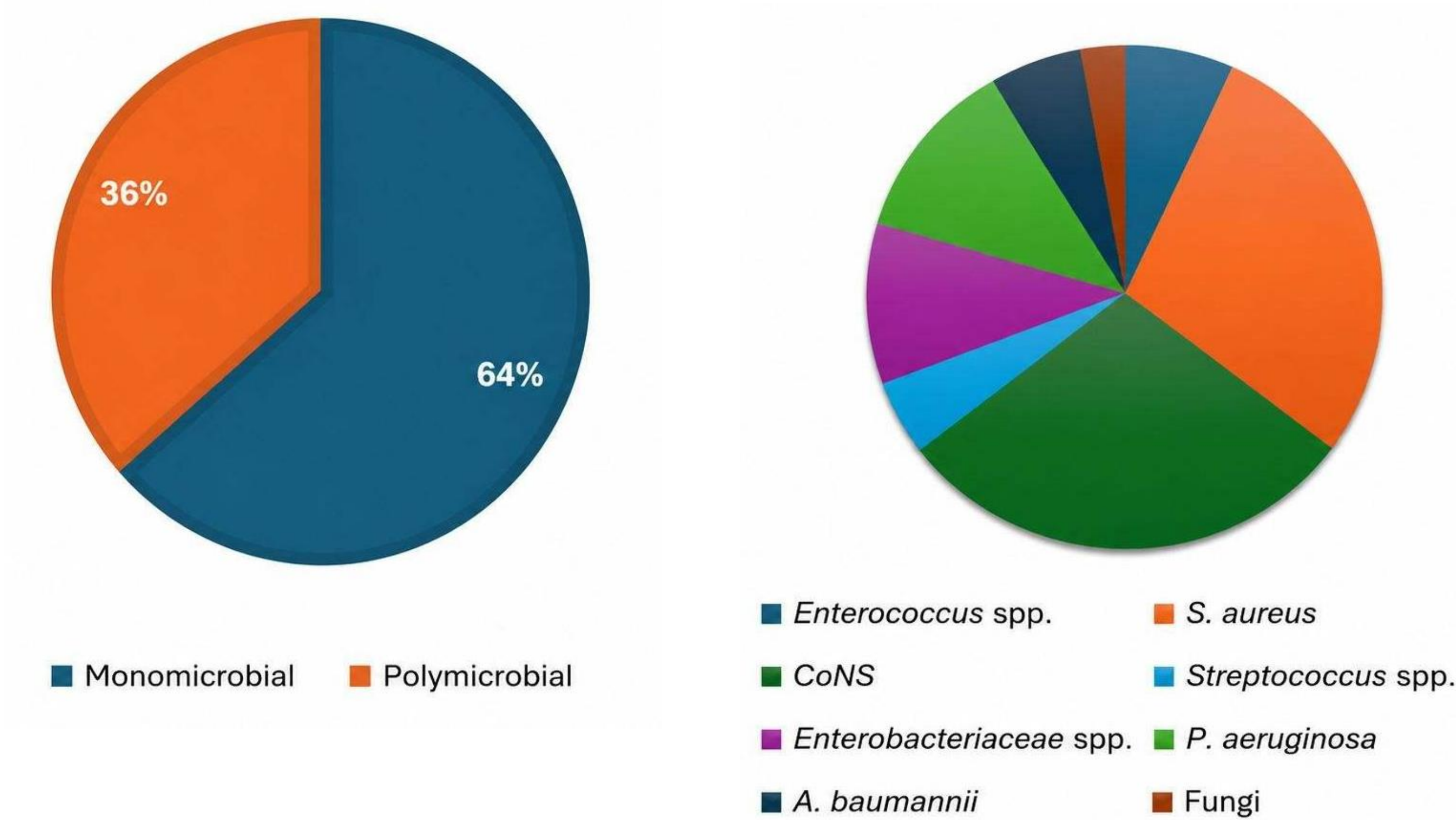
Microbiological isolation occurred in 81.5% of infections, with 64% monomicrobial and 36% polymicrobial. Gram-positive bacteria predominated: *S. aureus* (30 cases; 21 MSSA, 9 MRSA) and *coagulase-negative staphylococci* (31 cases). Gram-negative pathogens included *Enterobacteriaceae spp.* (10, including 4 CRE), *P. aeruginosa* (13), and *A. baumannii* (6). Fungal infections were rare (3 cases), and bacteremia occurred in 14%.

Patients with OIs underwent a median of 2 surgeries and received a median of 12 weeks of antibiotic therapy. Antibiofilm antibiotics were used in 66.3% and long-acting agents in 51%. Median hospitalization was 18 days. Clinical outcomes showed 53.3% recovery and 2% mortality (the others patients are on follow-up).

Conclusions

Our cohort highlights the high burden and complexity of OIs, characterized by advanced age, multiple comorbidities, and polymicrobial etiology. *Staphylococcus spp.* predominate, but multidrug-resistant Gram-negatives remain significant. The therapeutic pathway is intensive, combining repeated surgery and prolonged antibiotic therapy. The multidisciplinary model enables structured management, though outcomes remain variable, emphasizing the need for early diagnosis, optimized antimicrobial strategies, and tailored surgical approaches.

Microbiological characteristics



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