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Successful treatment of *Pseudomonas aeruginosa* osteomyelitis with limited duration of antibiotic monotherapy

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Background: Osteomyelitis due to *Pseudomonas aeruginosa* is a rare entity. Knowledge concerning its management is limited and based on small case series and occasional case reports. The aim of this study was to present our 15-year experience and provide a comprehensive analysis of the largest cohort to date of patients with *P. aeruginosa* osteomyelitis.

Material/methods: We reviewed the medical records of patients admitted to a large French university hospital for *P. aeruginosa* osteomyelitis over a 15-year period. Patient outcome was assessed at follow-up after at least six months.

Results: Sixty-seven patients were included, comprising 57% with chronic osteomyelitis (lasting over one month). Polymicrobial infection was predominant (63%), and an infected device was involved in 39% patients. The overall treatment success rate was 79.1%. All but one patient were treated with a combination of surgery and antibiotic therapy. Surgery mainly consisted in debridement of necrotic bones and soft tissue and removal of infected devices in case of chronic infection. The antibiotic treatment had a mean duration of 45 days (range, 21–90 days). The main strategy was initial parenteral therapy (median duration, 15 days) followed by an oral fluoroquinolone. Single antibiotic therapy was preferred in nearly all cases. Treatment failure was reported for 14 patients and was due to the persistence of *P. aeruginosa* in four cases. No significant risk factor for treatment failure was identified, especially when treatment strategies were compared.

Conclusions: We advocate optimal surgical debridement combined with initial parenteral antibiotics for a maximum of 15 days, followed by an oral fluoroquinolone. Total treatment duration should not exceed six weeks, and antibiotic treatment with two-drug combinations does not seem necessary.