



Surgery without postoperative antibiotic treatment in diabetic foot osteomyelitis is not associated with recurrence or limb loss

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ABSTRACT

Not using antibiotics after surgical treatment of diabetic foot osteomyelitis was not associated with failure of the surgery, recurrences, or limb loss. Antibiotics were given in doubtful complicated cases such as severe infections, cases with necrosis, foul-smelling lesions and patients requiring revascularization.

Current guidelines recommend antibiotic therapy for just a few days if there is no soft tissue infection and all the infected bone has been surgically removed in cases of diabetic foot osteomyelitis (DFO) [1]. Postoperative antibiotics may be overused, and such overuse could be associated with higher costs, side effects and the appearance of multi-drug resistant bacteria. Our approach to DFO is to avoid using post-operative antibiotic therapy in cases in which the surgeon visually establishes that the infected tissue (both bone and soft tissue) has been fully removed.

Our hypothesis is that recurrences and limb loss in cases of DFO are not associated with not using postoperative antibiotic treatment when the surgeon establishes that all the infected tissue has been removed.

1. Methods

We conducted a prospective observational study consisting of a cohort of 200 patients with diabetes and moderate and severe foot infections consecutively recruited from our Diabetic Foot Unit, Hospital San Juan de Dios, San José de Costa Rica, Costa Rica from October 15, 2020 to December 15, 2021.

The diagnosis of infection and its severity was based on the IWGDF guidelines [1]. Exclusion criteria were mild infections and patients who did not want to be included in the study (none).

Osteomyelitis diagnosis was preoperatively suspected based on a

combination of probing-to-bone test and simple x-ray [2]. Furthermore, intraoperative findings of bone infection were evaluated by an experienced surgeon. Bone biopsies were taken during the procedure and were sent to microbiology and pathology laboratories. Thus, the diagnosis of osteomyelitis was definitive in every case included in the series according to previous consensus [3].

Surgery (amputation or bone resection) was carried out usually on the same day on which the patient was evaluated, except for cases needing medical stabilization. Surgical wounds were left open to heal by secondary intention. Wound care including minor debridement was provided by experienced nurses.

Antibiotics were not given in the pre- and intraoperative periods. Local antibiotics were never used. The cases in which the surgeon visually established that non-residual infection remained after the surgical procedure were treated without postoperative antibiotics. An empiric antibiotic regimen was provided in cases requiring antibiotics until the microbiology report was received. Antibiotics were then altered according to the results of the antibiogram.

Failure of the first surgical approach was defined as the need for a further surgical procedure due to persistence or recurrence of the infection. Recurrence of the infection was defined as any condition in which clinical signs of infection reappeared during the follow-up, including impairment of the healing course and/or cases that needed additional antibiotic therapy and/or surgical revision. Limb loss is

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