



COMMENT ON LÁZARO-MARTÍNEZ ET AL.

Antibiotics Versus Conservative Surgery for Treating Diabetic Foot Osteomyelitis: A Randomized Comparative Trial.

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Lázaro-Martínez et al. (1) performed a randomized trial investigating effects of antibiotics versus surgery in patients with a presumed diagnosis of osteomyelitis. They concluded that antibiotic and surgical treatment had similar outcomes in terms of healing rates and short-term complications. We are concerned that the absence of confirmation of osteomyelitis by systematically performing bone cultures compromises the generalizability of their results to patients with proven osteomyelitis.

Bone cultures should routinely be performed to confirm a suspicion of osteomyelitis (2–4). In the surgery and antibiotic groups, inclusion and the diagnosis of osteomyelitis were merely based on two diagnostic tests, an abnormal plain X-ray and a positive probe-to-bone (PTB) test. A review on this topic showed that plain X-rays are marginally helpful and the positive likelihood ratio of a positive PTB test is only 6 (4). The usefulness of a diagnostic test, in this case the PTB test, is strongly influenced by the proportion of patients suspected of having the disorder. For example, presuming a real-life (4) pretest probability of 15%, the posttest probability of osteomyelitis when the PTB test is positive will be only 53%. This example shows that a positive likelihood ratio of 6 makes this test

far too unreliable to confirm the diagnosis of osteomyelitis (4,5).

After inclusion and after a 2-week wash-out period, patients in the surgery group received bone cultures and ulcer cultures, whereas patients in the antibiotic group only received ulcer cultures. Cultures taken from the bottom of the ulcers do not reliably predict bone microorganisms (4). The value of bone culture confirmation for diagnosing osteomyelitis was exemplified by the discrepancy between ulcer and bone culture results in patients randomized to the surgery group.

A substantial number of culture results could actually have represented colonization or contamination. Infection, instead of colonization, would likely have resulted in severe infections and dropouts during the 2-week antibiotic wash-out period in patients with osteomyelitis caused by the highly pathogenic *Pseudomonas aeruginosa*. The insufficient antibiotic dosing, for example, amoxicillin clavulanate acid tablets three times daily, adds to the possibility that culture results represented colonization. Also, histopathologic evidence for infection would have differentiated between osteomyelitis caused by *Staphylococcus epidermidis* and contamination (2).

Future studies are needed that require bone cultures and histopathologic

evidence as a prerequisite for inclusion. Surgical procedures, unnecessary antibiotic exposure, and possibly development of antibiotic resistance could have been avoided in this trial when routine bone cultures would have been performed.

Duality of Interest. No potential conflicts of interest relevant to this article were reported.

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