Short- versus long-term antimicrobial treatment for acute hematogenous osteomyelitis of childhood: prospective, randomized trial on 131 culture-positive cases.


Abstract

BACKGROUND: Considerable uncertainty exists on the optimal duration of antimicrobials for acute hematogenous osteomyelitis (AHOM) in children. Often they are administered for 1 to 2 months, the first 1 to 2 weeks intravenously, and decompressive surgery is usually added. No prospective, randomized, sufficiently powered comparative trial has been available.

METHODS: Children aged 3 months to 15 years with culture-positive AHOM were randomly assigned to receive clindamycin or a first-generation cephalosporin for 20 or 30 days, including an intravenous phase for the first 2 to 4 days. Surgery was kept at minimum. Illness was monitored with preset criteria. Antimicrobial was discontinued once most signs had subsided and serum C-reactive protein decreased $\leq 20$ mg/L. The primary end point was full recovery without need for further antimicrobial therapy because of an osteoarticular indication during the 12 months after the primary therapy.

RESULTS: Of the 131 cases, 18% also involved the adjacent joint. Staphylococcus aureus caused 89% of cases, and all strains were methicillin susceptible. The median duration of treatment was 20 days for 67 children, and 30 days for 64 children. Most children underwent only the diagnostic percutaneous aspiration or drilling, and 24% had no surgery. Except for 1 mild sequela in both treatment groups, all patients recovered entirely.

CONCLUSIONS: Most cases of childhood AHOM can be treated for 20 days, including a short period intravenously, with large doses of a well-absorbed antimicrobial such as clindamycin or a first-generation cephalosporin, provided the clinical response is good and C-reactive protein normalizes within 7 to 10 days. Extensive surgery is rarely needed.