CORRESPONDENCE

Treatment Algorithms for Chronic Osteomyelitis

by Dr. med. Gerhard Walter, Dr. med. Matthias Kemmerer, Dr. med. Clemens Kappler, Prof. Dr. med. Reinhard Hoffmann in volume 14/2012

Local Antibiotic Therapy Was Not Given Enough Space

The authors deserve thanks for their review article. However, contrary to my own expectations, they dedicate only one sentence to local antibiotic treatment—namely, that the effectiveness of local antibiotic therapy has not been scientifically proven. The reference cited in support of this statement is to a study investigating systemic antibiotic therapy in the plastic surgery setting, which similarly deals with the subject in one sentence only: “Local delivery of aminoglycosides could potentially eliminate the need for systemic aminoglycosides.”

I wish to speak up in favor of adjuvant, local antibiotic therapy. If tolerated, such treatment may result in temporarily much higher local bactericidal concentrations of the active substance—ideally accompanied by a reduced risk for sub-inhibitory concentrations of active substance (1). Furthermore, local antibiotic therapy seems to be an important addendum to vacuum therapy for the purpose to the so called dead space management. Our experiences and the literature on the subject of antibiotic-coated bone marrow nails (2), their further development, and biodegradable antibiotic carriers (1, 3) give rise to hopes for an additive effect. The polymethylmethacrylate (PMMA) chains shown in the available article have not been popular for quite some time now (1, 3).

In actual fact, solid scientific proof is lacking for the therapeutic options for chronic osteomyelitis/osteitis. In my opinion, however, the cornerstones of treatment are surgical debridement, stabilization, dead space management, and systemic and adjuvant local antibiotic therapy.

DOI: 10.3238/arztebl.2012.0576a

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In Reply:

Thaller missed a more comprehensive discussion of local antibiotic treatment in our article and comments that we cited only one study on the subject ([e33] in the article). Many aspects cannot be given enough space in the restricted context of a review article. These include the topic “local antibiotic therapy”; numerous publications have appeared on this subject, which have confirmed positive experiences with this approach. However, to date the scientific proof is missing that patients actually benefit from local antibiotic treatment. As early as in 1977, Klemm, who was one of the pioneers of introducing local antibiotic treatment, assessed its potential with some degree of criticism: “When discussing the frequency of recurrence after gentamycin-PMMA chains it needs to be stated first of all that even this new therapeutic approach cannot change the course of chronic osteomyelitis” (1).

When considering the shallow level to which gentamicin penetrates into the bone, which was shown by Wahlig in an animal model, it seems likely that local antibiotic carriers will be used primarily for the purposes of dead space management (2). Prophylactic coating of implants in order to prevent colonization and biofilm development, however, is a different matter. Their development is in its early stages and looks promising; we use these products too. They do not have a therapeutic purpose and their benefit has not been confirmed to date. In our article we mentioned these in the section on prevention.

Thaller’s criticism is justified in as far as we have not cited sufficient numbers of studies assessing local antibiotic therapy. Almost all studies of the treatment of chronic osteomyelitis do, however, include local antibiotic carriers; we merely omitted mentioning these again in that particular context (for example, references [7, 24, 25] in our article).

DOI: 10.3238/arztebl.2012.0576b

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Conflict of interest statement

The authors of both contributions declare that no conflict of interest exists.