

Less antibiotics but no inferior effect for bacterial arthritis

We read with deep interest the article by Gjika *et al*,¹ which was aimed at assessing either 2 or 4 weeks of antibiotic therapy after surgical drainage of native joint bacterial arthritis in adults. The results indicated that the effects of the 2-week targeted antibiotic treatment were not inferior when compared with those of the 4-week treatment, and at least the hospitalisation time for hand and wrist arthritis was significantly shortened. This conclusion might be of great significance for surgeons to decide on how to prescribe antibiotics and for patients, who might have received fewer antibiotics without inferior effect, and might help reduce medical costs and bacterial resistance.

It is a daunting task to rectify the abuse of antibiotics in China² in the past decade. The Chinese government was actively rectifying antibiotic abuse, and this study provided evidence regarding the reduced use of antibiotics for bacterial arthritis. In this study, bacterial arthritis was mainly seen in the hand and wrist and included joint infection from pet bites. To the best of our knowledge, in China, bacterial arthritis is majorly noted in the large joints, such as the knee and hip joints. With economic development and increase in household income, more families are starting to raise pets, and there is reason to believe that pet bites will also increase rapidly.³ Therefore, the conclusions provided a valuable guide for Chinese surgeons to treat the small joints and soft-tissue infections after pet bites. However, there are a few worthwhile issues that need exploration in the study.

First, the authors included patients with an abscess in the surrounding soft tissue, including bacterial arthritis but excluding osteomyelitis, and abnormal radiological images were not required to define bacterial arthritis. However, to the best of our knowledge and experience, it is difficult to determine soft-tissue abscesses, osteomyelitis and bacterial arthritis without radiological images, especially in the small joint. Plain radiography, although not useful for imaging of the joints, may be performed routinely to exclude underlying osteomyelitis.⁴ Moreover, the deep or anatomical complexities or narrow joint spaces, such as those of the shoulder and hip, and metatarsal joint infections are difficult to diagnose without radiological images. MRI can help diagnose and assess the indication of orthopaedic intervention. Furthermore, MRI will also indicate the extent of soft-tissue involvement around the joint infection.⁵

Second, a previous study confirmed that arthroscopic treatment was a more successful index procedure with a long-term postoperative range of motion than open treatment for acute native knee septic arthritis.⁶ However, in the study, only seven cases (5%) underwent arthroscopy and all others underwent open arthrotomy. Moreover, after surgical drainage, was there a continuous antibiotic-containing saline flush for hip and knee infection?

Third, several patients received vancomycin, imipenem, meropenem and linezolid as treatment. However, the authors did not explain the reasons for selecting the above antibiotics before the aetiological results came out. Additionally, was there a de-escalation in the use of antibiotics when the clinical situation permitted initial use of the former high-grade antibiotics, especially for patients with bacteraemia?⁷ The authors performed comparison between 2 weeks and 4 weeks of antibiotic therapy, but why did table 2 show 6 weeks and 4 weeks of parenteral antibiotics?

Fourth, because of several animal-borne infections in the study, it would be more valuable if the authors could publish the results of bacterial cultures after pet bites (such as by cats and dogs) and the results of sensitive antibiotics. In a previous study,⁸ cat or dog bites lead to *Pasteurella multocida* infection, rat bites lead to *Streptobacillus moniliformis* infection, while human bites lead to *Eikenella corrodens* and *Fusobacterium nucleatum* infection.

We respect the significant contributions of the authors and look forward to the follow-up results of this study.

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