Hot Joint update 2017
Dr Catherine J Mathews, Dr Gerald Coakley

The British Society for Rheumatology (BSR) guideline for the management of the hot swollen joint was first published in 2006 (1). There was a striking paucity of good quality evidence to guide best practice and the evidence base still remains poor. There are, however, some important areas of enquiry which may indicate a direction of travel for future research and, although there is not enough data to constitute a change in the guideline, there is sufficient new information to warrant an update. We plan to undertake a formal review of the guideline within the next two years.

This short brief will outline two areas of ongoing research in the management of musculoskeletal infection which may change future practice: firstly the use of serum pro-calcitonin as an adjunct to clinical diagnosis, and secondly the use of corticosteroids in addition to antibiotic therapy.

It is well documented that a delay in the diagnosis and treatment of septic arthritis causes significant morbidity and mortality (2). Good outcomes depend on timely diagnosis and initiation of therapy, but there is not yet a diagnostic test with sufficient sensitivity or specificity to reliably discriminate between joint inflammation and joint infection. There has been some focus in the literature on trying to find a better biochemical marker for bacterial infection, and serum pro-calcitonin (PCT) has emerged as a hopeful contender.

Serum PCT is a peptide precursor of the hormone calcitonin. It remains at very low levels in healthy individuals (<0.1ng/ml). In the presence of bacterial endotoxin, levels rise very sharply. This has contributed to speculation about its potential use as a marker of serious systemic bacterial infection. Studies in systemic and respiratory sepsis have suggested that its ability to discriminate between bacterial and non-bacterial sources of inflammation give it a useful role in antibiotic stewardship, reducing both the initiation and duration of antibiotic treatment (3). This could have positive implications on cost, patient safety and the development of antibiotic resistance.

In the context of musculoskeletal infection several small studies have investigated the use of serum PCT in diagnosis and management. A cut-off level of 0.4ng/ml may be clinically useful in discriminating between bacterial and non-bacterial joint inflammation (4). Levels greater than 0.5ng/ml might be a more specific marker for bacterial infection than CRP, ESR or WBC, but lower levels, even as low as 0.2ng/ml, may not rule out bacterial infection (5).

In conclusion it appears that the search for a reliable diagnostic marker is still ongoing. Serum PCT cannot yet be recommended as a routine diagnostic tool but it may be prove to be a useful adjunct to current investigations. Clinical suspicion remains the mainstay of diagnosis in musculoskeletal infection.

Corticosteroids have long been used on the intensive care unit for the treatment of sepsis (6). The hallmark of septic shock is uncontrolled systemic inflammation and there is evidence that, in certain clinical scenarios, steroids can reduce systemic and tissue inflammation, restore organ function and improve patient outcomes. An updated Cochrane review was published in 2015 on this subject (7).

In the context of joint sepsis there is evidence supporting the use of adjuvant corticosteroids, together with antimicrobial therapy, in animals and in children with septic arthritis (8). Positive outcomes have included a faster rate of CRP normalisation, quicker resolution of symptoms and shorter duration of antibiotic therapy. A Cochrane review is currently underway “To determine the benefits and harms of corticosteroids as an adjunctive therapy in children with a diagnosis of septic arthritis.” As yet, however, no significant trials have been performed in adults and therefore, although there may be a sound scientific rationale for the use of corticosteroids, there is insufficient evidence to make a therapeutic recommendation.
REFERENCES


