

ROUNDUP³⁶⁰

Spine

Less is more in pyogenic vertebral osteomyelitis

■ In what we are sure, here at 360, will go on to become a practice-changing study, surgeons from all over **France** co-operated in a large multicentre randomised controlled trial to recruit 359 patients from 71 centres into a comparative study exploring the ideal length of antibiotic use in patients with pyogenic vertebral osteomyelitis. Arguing that current standards of care are based predominantly on expert advice rather than evidence, these French collaborators designed an open-label non-inferiority study to establish the optimum treatment time for patients with pyogenic osteomyelitis. Patients were randomised to treatment with antibiotics for either six weeks or 12 weeks following diagnosis of pyogenic osteomyelitis. Outcomes were assessed at a year following treatment by a blinded outcomes committee who established which patients were cured (primary outcome). There were no differences between the groups, with an identical cure rate (90.9%) in both groups and similar rates of death (8% at 6 weeks vs 7% at 12 weeks), antibiotic intolerance (4% 6 weeks vs 2% 12 weeks) and neurological compromise (4% 6 weeks vs 2% 12 weeks).¹ This study was a resounding success with high follow-up rates and a clear clinically relevant message. Pyogenic vertebral osteomyelitis only requires six weeks of antibiotic therapy.

Paracetamol out of favour in spinal pain but effective for osteoarthritis

■ Determining the most effective method for treatment of spinal and low back pain is seemingly a never-ending quest. There is plenty of evidence to suggest that although many patients present with functional overlay, the condition itself is certainly associated with significant pain and pain control issues. The World Health Organisation (WHO) defines an analgesic ladder for treating all painful conditions that starts with simple analgesia, and due in most part to this, clinicians the world over routinely prescribe paracetamol for management of spinal-related pain. A review team from **Sydney (Australia)** examined the evidence for paracetamol in the management of spinal pain. Their paper included 13 RCTs, treated with meta-analysis, and established with a high level of certainty that paracetamol did not appear effective in reducing pain intensity, disability or improving quality of life in the short term in patients with back pain.² However, there is good quality evidence that paracetamol does significantly improve both pain and quality of life scores in hip and knee osteoarthritis. Even here, however, the review team have cast doubt on the efficacy of paracetamol, pointing out that while the medicine does improve pain scores significantly, the results may not be clinically relevant. Perhaps it is time to reconsider the analgesic ladder in patients with musculoskeletal pain?

Local wound irrigation to reduce infection?

■ Over the past year, spinal surgical research has focused somewhat on local methods to reduce wound infection rates. There have been a number of conflicting papers evaluating the efficacy of topical measures to reduce wound infection rates, most frequently the use of topical antibiotics (usually gentamycin or vancomycin) in un-reconstituted powder form at the end of the operation. These studies have shown a mixed picture, and we recently reported the results of a meta-analysis suggesting topical antibiotics have no effect. Undaunted by this, surgeons in **California (USA)** have evaluated the efficacy of their preferred regime of topical betadine and vancomycin powder. The authors evaluated the efficacy of a surgical site infection (SSI) prevention protocol consisting of a combination of 0.3% betadine wound irrigation and 1 g of intrawound vancomycin powder application. In their institution, following this change in practice they report that SSI rates were reduced by 50% after the intervention.³ The difficulty with interpreting this kind of data is that the authors have instituted two different changes in practice, and also have the Hawthorne effect and other potential unintended benefits from focussing on post-operative infection. Betadine is slightly acidic, where vancomycin is extremely acidic (pH 3.4) – it is not clear which of these two interventions could be

responsible for the effect. All in all, we are not quite blown away with the clarity of the science here at 360.

Lumbar facet joint effusion: a reliable prognostic sign?

■ Determining which patients are unstable when treating degenerative lumbar spondylolisthesis is important as fusion carries health economic costs and, some would argue, longer-term increased risks of adjacent segment degeneration. There is, however, little objective that surgeons can use in borderline cases to decide if the segment needs fusing.⁴ Investigators in **Zurich (Switzerland)** set out to establish if the presence or absence of fluid in the facet joints was prognostic for clinical instability. In a cleverly designed study, the research team used the results of 160 patients on their spinal database to determine the prognostic value of facet joint effusion on outcomes. The cohort consisted of a mixture of patients both with and without lumbar facet effusion undergoing decompression alone, or decompression and fusion. There were, however, no differences in outcomes (as assessed by the Core Outcome Measures Dataset) once confounders had been adjusted for between any of the groups, suggesting that this is not a reliable predictor of instability.

SPORT for the octogenarian

■ The Spine Patient Outcomes Research Trial (SPORT) study has yielded some of the more useful studies over the past couple of

years in spinal surgery. Some of the secondary outcome papers (such as this), although not truly 'at power' or as the study was designed, do add significantly to what is known about the subgroups treated as part of the study. This study from **Philadelphia (USA)** concerns patients over the age of 80 (n = 105), whom the authors compared with patients aged under 80, in what appears to be an arbitrary cut off (n = 1130). The authors established that there were no baseline differences between the two cohorts in terms of reported outcome measures. There were, however, some differences in diagnosis, with higher levels of multilevel disease and asymmetric motor weakness in the older age group. The study reports a similar-sized treatment effect in the older cohort with no excess complications or re-operation rates.⁵ This paper essentially demonstrates effectively that lumbar spine decompression surgery is equally effective and safe in the older population. We are slightly disappointed here at 360 that the authors have not used age as a continuous variable for their analysis which would have strengthened the study somewhat. What we can conclusively say is that lumbar spine decompression surgery should not be withheld on the grounds of age alone.

Neurological deterioration following traumatic spinal cord injury

■ There is not much out there concerning the longer-term effects of traumatic spinal cord injury. Although the acute pattern of disease and recovery rates is known, there are few reports on the incidence (or absence) of longer-term neuro-

logical deterioration. Researchers in **Newcastle (UK)** have written up their novel study looking at evidence from medico-legal cases, which typically occur several years after an injury, to establish what the evidence is for neurological deterioration or recovery in the longer-term following a traumatic spinal cord injury. The team used medical reports from 59 patients that were prepared for the court in cases of traumatic neurological injury where there was a question surrounding clinical negligence.⁶ The incidence of neurological change was 46% (n = 27/59) and, for the most part, change was deterioration in patients who

had no primary neurological deficit (74% of those who changed, n = 20). The majority of those patients who presented with unstable fractures had neurological deterioration (61%, n = 23/38). Worryingly, there were identifiable breaches of duty in all 23 cases where deterioration could be potentially attributed to either failure to immobilise the spine adequately, or early removal of metalwork. There were an additional two patients (failure to evacuate a haematoma and over distraction in a cervical spine manipulation) where deterioration could also be attributed to poor medical management. This series makes for pretty grim reading; the experts' opinion was that, in their series, 93% of patients' neurological deterioration could be

prevented by, or was caused by, the medical treatment offered.

PROMS in spinal surgery

■ Patient-reported outcome scores have become key to both service evaluation and defining outcomes for patients across all types of orthopaedic diagnoses. One of the difficulties with PROMs is that the minimally clinically important change (MCIC) should be defined for different diagnoses, in addition



to validation of the scores themselves. Variations in outcomes assessed without knowing the MCIC are difficult to interpret. Patients may reach a statistically significant difference that does not reach clinical

significance, leading to a false positive result. Spinal surgery is one area where there are a range of scores available, but the MCIC is not defined for many scores in many outcomes. Researchers in **Leicester (UK)** have set out to establish this crucial information and how it varies from intervention to intervention. The authors designed a retrospective analysis of the results of 244 patients who underwent surgery over a 15-year period. Patients were followed up to a mean of five years. The authors used three described methods to independently calculate the MCIC for a range of operations and outcome measures. They established that there is considerable variation between methods of calcu-

lation of the MCIC and the operative group in which they are calculated.⁷ Assessment of PROMs is essential in the evaluation of surgical outcomes and comparison of procedures. There desperately needs to be not only an agreed consensus as to how to calculate the MCIC, but how to evaluate them when you have the data!

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