

# ROUNDUP<sup>360</sup>

## Spine

*For other Roundups in this issue that cross-reference with Spine see: [Children's orthopaedics Roundup 4](#); and [Research Roundup 5](#).*

### Paracetamol may not work in lower back pain

■ Hot on the heels of a randomised controlled trial demonstrating improvement in pain scores in patients undertaking exercise therapies (and suggesting the type of exercise is unimportant) comes this interesting multicentre randomised placebo-controlled trial from investigators in **Sydney (Australia)**, aiming to establish the efficacy of paracetamol in treating low back pain. In the majority of developed nations the WHO analgesic ladder is followed for pain management in which simple analgesics such as paracetamol are first-line treatments for painful conditions such as mechanical back pain. In an extremely well-conducted trial from the *Lancet*, a multicentre study involving 235 primary care centres across a four year period in Sydney. Patients were randomised to either regular paracetamol, as required paracetamol or placebo treatment. Patients also received best practice evidence, and outcomes were assessed as time to recovery from low back pain (defined as a seven-day period of Visual Analogue Scale (VAS) pain scores of 0 or 1.<sup>1</sup> In total, 1652 patients were recruited into the study and the median time to recovery was 17 days across all patients. There were no significant differences between the groups (regular par-

acetamol 17 days; as required 17 days; placebo 16 days). There was also no difference in treatment compliance, adverse events or any measured secondary outcome measures. In light of this study although clearly simple analgesia can help with symptom control, it does not alter the course of an episode of acute back pain, neither does it appear to shorten the duration of symptoms.

### En-bloc resection of vertebra reported for the first time [x-ref Oncology](#)

■ There is little in the way of data to inform outcomes following en-bloc vertebral resection of spinal tumours, although the practice is relatively widespread. Estimating the eventual health-related quality of life of such a procedure is fraught with the difficulties associated with estimating quality of life in rare and diverse conditions. Researchers in **Kanazawa (Japan)** have released the initial patient-reported outcomes and health-related quality of life scores after such surgery. Their series reports the results of an initial 54 patients who underwent total vertebral excision over a 17-year period. Of the initial 54 patients, 31 were available for contemporary follow up (19 deaths to follow up). Outcomes were assessed using the SF-36, subgroup analysis yielded extremely satisfactory results. There were few differences in the mental health and social functioning components of the score between population norms and the study group. In the immediate post-operative period

physical health was impaired, but these outcomes had almost returned to normal by three years following surgery.<sup>2</sup> From a functional outcomes perspective en-bloc resection does not appear to result in any impairment of health-related quality of life. Although this report does not contain any specific comparative data to other treatments, the population norms for the SF-36 are well-described, and patients undergoing this intervention tend to make an excellent recovery, giving them comparable health-related quality of life to the general population.

### Spinopelvic disassociation under the spotlight [x-ref Trauma](#)

■ A potentially devastating high energy injury, the consequences of spinopelvic disassociation cannot be underestimated. Associated with high rates of sacral nerve root compromise, ongoing pain and difficult fixations, there is little to guide the surgeon as to the best method for treating this difficult and complex injury pattern. Surgeons in **Helsinki (Finland)** have managed to draw together nearly two decades of experience and report 36 consecutive patients all presenting with H-shaped fractures and associated spinopelvic disassociation. The surgical team treated all patients similarly with a decompression and lumbopelvic fixation. They used their series to tease out prognostic factors for outcome in these difficult injuries. Outcomes themselves were assessed both from the pelvic perspective

(Pelvic Outcome Scale), radiologically and in terms of neurological recovery.<sup>3</sup> Outcomes in this series were mixed, despite careful attention to reduction and decompression. 15 patients (42%) reported poor clinical outcomes. The authors were able to identify that greater initial displacement was predictive of a poorer eventual outcome (both in terms of neurological status and pelvic function). In line with this residual displacement, deformity was also associated with a poorer outcome although many other factors (including age, fracture type, surgical timing and decompression) did not have any apparent effect on eventual outcome. It seems that in this injury it is simply the degree of displacement and quality of reduction that determine the outcomes. It would seem sensible for patients to be transferred to larger, specialist centres where surgeons are more familiar with the surgery, even if that results in a delay to surgery than management in smaller, less specialist centres.

### Disc replacement and ACDF equivalent in randomised study

■ The theoretical advantages of disc replacement are well-understood with the well-worn arguments of motion preservation, avoidance of adjacent segment disease and various other biomechanical arguments. Detractors would, however, argue that anterior decompression and fusion is potentially a permanent solution with no further surgery

required and a safer side effect profile. There are however few studies testing these potential advantages in enough patients to draw any firm conclusions. Researchers in **Shandong (China)** designed a randomised controlled trial with the aim of comparing outcomes between the two strategies. In the trial, 111 patients from 11 medical centres in China were randomised to either anterior decompression and fusion (ACDF n=56) or cervical disc replacement (CDR n=55). Outcomes were assessed at regular intervals with up to four years of follow up using a combination of clinical outcome measures (Japanese Orthopaedic Association (JOA) scores, visual analogue scale (VAS) and Neck Disability Index (NDI)), radiographic outcomes and secondary measures including complications and adjacent segment disease progression.<sup>4</sup> There were no differences in any of the measured clinical outcome scores between the two groups, however there was a difference in range of motion. The ACDF group had (as would be expected) a static reduction in range of motion across all follow up intervals. Although the authors conclude that their work supports the use of disc replacements, with no improvements in outcome measures and longer term follow up unknown, where the arthroplasties would likely start to fail at increasing rates, we would be slightly less effusive until this study reports at a longer follow-up interval.

#### Hope for low back pain?

■ Perhaps the trickiest of conditions to treat, one has to wonder if there are any proven, fully effective treatments for low back pain. With almost as many questions as answers

the best treatments for low back pain remain somewhat opaque. We were delighted when the report of this randomised controlled trial of two different rehabilitation interventions conducted in **Calgary (Canada)** crossed the desks at 360 HQ. The research team conducted a comprehensive study into the efficacy of two different exercise programmes for patients presenting with low back pain. Outcomes were assessed with the Visual Analogue Scale (VAS) score and Oswestry Disability Index (ODI). The study team recruited and randomised 80 patients to one of the two interventions a lumbopelvic motor control programme with or without progressive hip strengthening exercise therapy programme from 11 general practitioners. Participants all completed six rehabilitation sessions and additional self-directed home sessions.<sup>5</sup> Whilst there was a statistically significant difference in pain scores across the whole cohort with treatment (of around 20 mm on the VAS score) there were no significant differences between the two groups. This study clearly supports the practice of a physiotherapy-based exercise programme for initial treatment of low back pain, with significant improvements across the board. Given the additional complexity of hip strengthening exercises and the lack of improved clinical outcome, it seems that perhaps the simpler option is better in this case.



#### Interspinous process devices ineffective

■ The proponents of interspinous process devices would argue that the advantages of indirect decompression of lumbar spinal stenosis simplifies the surgical procedure, and reduces the risks of complication and further surgery. The detractors would make the case that without adequate direct decompression and fusion, distraction at the spinous processes is likely to result in the eventual erosion of the processes, or mechanical failure of the implant. Although there are a number of potential indications, the clearest cut are used in patients with intermittent isolated claudication caused by lumbar spine stenosis. Despite widespread adoption the longer-term health economic benefits (or otherwise) remain unclear. Researchers in **Leiden (The Netherlands)** have reported their own cost utility analysis alongside the randomised controlled trial of interspinous process device (IPD) versus traditional lumbar decompression surgery as a secondary outcome measure. The study itself enrolled 159 participants (n=80 IPD and 79 decompression). The health utility analysis was based on quality of life achieved during the first year (estimated using the EuroQol 5D) in addition to direct and indirect healthcare costs. Patients were analysed on an intention-to-treat basis and the outcomes compared between the two groups. The

primary study revealed that there was no difference in quality of life when assessed on an intention to treat basis with equivalent quality of life scores in both groups. This is set against the more expensive use of IPD treatment (resulting in excess healthcare costs of €3,030 per patient).<sup>6</sup> Like many new technologies the balance of cost effectiveness can be debated, and what is considered a 'cost effective' intervention varies from one healthcare system to another. That said, in studies like this one where the outcome is fairly clear there are few arguments that could be made for the more expensive, less effective treatment, other than the novelty of the implant.

#### REFERENCES

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