COCHRANE CORNER

New and updated reviews published by the Cochrane collaboration.
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While the Cochrane Collaboration have been busy over the last four months, only a handful of their published reviews have been of any relevance to orthopaedic and trauma surgeons. Those that are provide the reader with an overview of work on imaging modalities, antibiotic therapy, changes to the surgical site dressing and practices surrounding post-operative wound management, including post-op bathing and negative pressure wound therapy for use in the treatment of diabetic foot wounds.

Shoulder surgeons have been busy evaluating the evidence for treatments of rotator cuff pathology, which is extremely common and can have disabling symptoms. Many patients present with a mixed clinical picture and in the modern world the majority of clinicians would confirm their diagnosis with imaging. With ever-increasing access to radiological studies and a growing burden of pathology, vast numbers of patients are referred for multiple varieties of imaging of their rotator cuff. The Cochrane Collaboration has published a new review from Brazil that attempted to establish which of the available imaging modalities is superior. This diagnostic test accuracy review specifically evaluated magnetic resonance imaging (MRI), magnetic resonance arthrography (MRA) and ultrasound (US) for assessing rotator cuff tears in people with shoulder pain in whom surgery is being considered.[1]

Prospective diagnostic accuracy studies assessing MRI, MRA or US against open or arthroscopic surgery as the standard were reviewed. Twenty studies were included in the review, of which only six made a paired comparison on the same patient. The review found that all three modalities of imaging had similar diagnostic accuracy for detecting full thickness tears, with no statistically significant differences in summary sensitivities and specifities. The review's meta-analyses found good discriminatory ability for detecting full thickness tears, with sensitivities and specificities above 92% for all imaging modalities, although MRI and US showed a much lower sensitivity for detecting partial thickness tears (MRAs was not included in this analysis). In particular, US with a summary sensitivity of 52% was only just better than chance at excluding partial thickness tears.[1] The review authors comment that the majority of studies had poor methodology scores and that although there is a reasonable volume of evidence to inform clinicians, with much of it being poor quality the review authors recommended further investigations. Until more evidence is available, the imaging modality of choice will likely remain dependent on local factors such as surgeon preference, cost and availability for rotator cuff pathology.

The Brazilians have been busy in this round of Cochrane reviews and have also have published an updated review dealing with the difficult choices surrounding antibiotic therapy in chronic adult osteomyelitis. While the majority of surgeons, microbiologists and infectious disease doctors agree that the gold standard of care for established chronic osteomyelitis is surgical debridement, there is less certainty surrounding pre-operative, peri-operative and subsequent post-operative management with antibiotic therapy. This review focuses in particular on the choice of antimicrobial, the optimal route of administration and duration of therapy.[2] The authors performed the usual extensive Cochrane literature review but were able to include only eight small studies in total, of which only four were appropriate for inclusion in the meta-analysis. The included trials evaluated five different antibiotic comparisons (oral *versus* parenteral, parenteral then oral *versus* oral only, parenteral then oral *versus* parenteral only, oral *versus* another oral, parenteral *versus* another parenteral). The review team were unable to find any RCTs that looked specifically at the duration of antibiotics.[2]

The authors found the data across the trials too heterogeneous to draw comparisons between antibiotics and establish the best antibiotic choice. They also found no evidence of a difference between oral and parenteral antibiotics or any combination thereof using rate of remission at end of therapy, or after a minimum of 12 months, as the outcome measure. No significant difference was found in the incidence of adverse events for each administration route.[2] While the authors found no differences in their outcome measures, they felt there was insufficient evidence to draw any conclusions from what were outdated studies with small numbers and at moderate to high risk of bias. Clearly, antibiotic therapy has a role to play in the control of chronic infection but we still do not have the answers for optimal administration route or duration.

A new review from a team in London (UK) evaluated changes to the surgical site dressing, analysing the evidence for risks and benefits of early dressing removal (48 hours) *versus* delayed dressing removal (after 48 hours). With theoretical advantages and disadvantages of both, there still remains a wide variation in surgical practice based on individual surgeon preference. In a relatively straightforward review, the team were able to identify four studies to include, of which three were available and suitable for meta-analyses. The trials studied a variety of head, neck and thoracoabdominal surgery, but no studies evaluated dressing changes in orthopaedic procedures. There were no significant differences found between groups in terms of rates of superficial and deep surgical site infection, wound dehiscence or other serious adverse events by timing of dressing removal. The authors state that while early removal of dressings seems to have no detrimental effect, and this might lead to a shorter hospital stay, it is based on very low quality evidence from small trials.[3] We do wonder here how dressing changes affect the length of hospital stay as this can easily be achieved in outpatients.

The same review team turned their attention to post-operative bathing in a second review recently penned on behalf of the Cochrane Collaboration.[4] The review focuses on practices surrounding post-

operative wound management of patients, particularly those with early (within 48 hours) or late (after 48 hours) bathing in patients with closed surgical wounds. The authors were only able to find one trial that met the study inclusion criteria and, although it was scored as being at a high risk of bias, the study did include 857 patients all undergoing the same skin excision surgery. The patients were randomised to either early bathing at 12 hours or later bathing. The study team were unable to do much more than provide a commentary on the single study they included in their review. The study itself did not find any statistically significant difference between the two groups, with similar post-operative infection rates.

In the final review looking at wound management, a study team from Manchester (UK) have set out to examine the evidence for negative pressure wound therapy (NPWT), in particular its use in diabetic foot wounds.[5] As the review team note, not only are diabetic foot wounds extremely difficult to manage but also they pose a significant health, economic and morbidity burden in the majority of western societies. Using fairly aggressive search methodology (including unpublished studies), the research team were able to include five studies in their review that collectively reported the outcomes of 605 patients randomised either to NPWT or standard of care. The two largest studies yielded the most important results, although both were noted to be at risk of performance bias. The studies between them demonstrated a decreased risk of infection in diabetic patients with an amputation (RR 1.44) and also an increased likelihood of ulcer healing (RR 1.49). These results were really based on the two largest studies, accounting for over 500 of the patients, with the remaining three studies adding limited data. In a bumper quarter for wound management reviews, it appears that the day after surgery, showering in a VAC without a conventional dressing has some basis in evidence. Perhaps, as always, more high quality studies are needed.

REFERENCES

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