Spinal Manipulative Therapy for Acute Low Back Pain

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Conscientious health professionals, say Sackett et al¹, “use both individual clinical expertise and the best available external evidence, and neither alone is enough”. It is testament to the logarithmic increase in clinical trials of physical therapy interventions², clinical diagnostic and prognostic factors—in particular for musculoskeletal disorders such as spinal manipulative therapy for patients with acute low back pain^{3–5}—that we now see succinct review articles by clinical and research experts, such as this review by Hancock et al, guiding clinicians on that essential distillation of clinical practice: how to deliver the right therapy, for the right patient, at the right time.

The science underpinning the art of clinical practice has come a long way in recent decades, such that clinical perspective pieces can not only discuss evidence regarding the efficacy of spinal manipulative therapy for the complex symptom of LBP (with its myriad underlying mechanisms), but can also refer to high quality research evidence on indications predicting which patients are most likely to benefit, optimal delivery of spinal manipulative therapy, quantitative data regarding contraindications, and which patients would be better off with an alternative therapy.

As Hancock et al state, historically clinical decision models were based on the level 5⁶ evidence of the clinical experience and professional background of the advocate(s), and inferences from basic

sciences. Treatment models that have been prospectively derived from such *grass roots* evidence were sometimes supported and sometimes confused by new basic science research findings. But central to every treatment decision model is that notion of ‘the right treatment, for the right patient, at the right time’: i.e. that better clinical outcomes result from prescribing an intervention that is expertly matched to the patient’s clinical presentation.

Hancock et al refer extensively to the growing body of evidence that examines this paradigm. Much of this evidence has evolved from scholarly expert clinicians putting *level 5* clinical decision-making models^{7–10} to the test^{11–15}. A program of scholarship linked with the University of Pittsburgh, in particular, set in motion a series of studies that has resulted in a formidable body of evidence investigating clinical decision-making models^{16–32}. The clinical prediction rule studies for identifying patients likely to improve with spinal thrust manipulation are the most well known of these: with both an establishment and a validation study, these have moved clinical decision-making to level 1a evidence⁶ for this particular subgroup of patients with the symptom of low back pain^{16,17}.

Hancock et al quite correctly warn that the clinical prediction rule may not generalize to low velocity techniques. It is important to note that clinical decision rule studies for interventions (such as spinal thrust manipulation) identify pa-

tients likely to improve with the specific intervention studied. In their secondary analysis of an earlier randomized controlled trial, Hancock et al found the Flynn-Childs clinical decision rule^{16,17} did not predict success in a group treated with a different set of interventions³³. Notably, the trial by Hancock et al did not involve a defined intervention protocol: therapist discretion was permitted regarding choice of manual techniques. Most therapists chose from a wide variety of low velocity mobilization techniques, with a very low proportion—5%—using thrust manipulation³⁴.

The evidence would tell us that a single form of physical therapy intervention is very unlikely to be broadly effective for all-comers with the complex symptom of LBP (with its myriad underlying mechanisms). However, evidence would also suggest that clinical trials which allow wide clinician choice of treatment technique generally get poorer results than trials with a defined intervention protocol³⁹. Asking what group of patients are most likely to improve with this widely heterogeneous variety of low velocity mobilization techniques is likely to be a fruitless exercise.

Hancock et al found that patients with acute low back pain receiving such a variety of low velocity mobilization techniques in addition to a regular and adequate dose of paracetamol (acetaminophen) do not recover more quickly than those taking the analgesia alone³⁴. What does this suggest? Well, firstly it

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tells us that, in general, advice and a regular and adequate dose of acetaminophen is an effective means of helping 80% of comparable patients recover in less than 6 weeks, and practically 100% by around 4 months. This in itself is a salient point. Hancock et al advocate that all professions who commonly provide SMT are capable of providing quality advice to patients and recommending simple over-the-counter analgesics. This is a thorny issue, as it breaches the Practice Acts of most jurisdictions for physical therapists to prescribe, or be perceived to recommend in their professional capacity, medications³⁵⁻³⁷. However, I would cautiously argue that all health professionals are duty-bound to inform their patients of the recommendations concluded by authoritative best practice guidelines, as an educative service, even if prescribing or providing the recommended therapies is beyond the professionals' scope of practice.

Secondly, and importantly, the Hancock et al study tells us that the widely heterogeneous variety of low velocity mobilization techniques commonly practiced by physiotherapists in Australia (and most likely elsewhere) provided negligible benefit in addition to advice and adequate analgesia. So how should we proceed? We could accept, as Koes did in his commentary to the paper, that the research reflects the use of spinal manipulative therapy in common daily practice³⁸, or we could consider whether current use of spinal manipulative therapy in common daily practice reflects evidence-based practice. I think we could learn more by considering the latter.

The diagnostic process is central to successful decision-making models, and many decision-making models require expert clinical assessment. Clinical research has made significant progress in this field in recent years. Patho-anatomical diagnosis of the source of low back pain was almost given up for dead prior to 2005, when a landmark study⁴⁰ and subsequent reports⁴¹⁻⁴⁴ revived the validity of the clinical examination. Prior to 2005 the evidence supporting manual assessment of spinal segmental motion

by physical therapists was level 3 at best, and remains controversial⁴⁵. Then two rigorous cohort studies independently reported evidence supporting the criterion-related validity^{46,47}, with highly comparable results⁴⁸, elevating the level of evidence to level 1b⁶. Also in 2005, a cohort study and a randomized controlled trial independently reported evidence supporting their predictive validity^{21,49}.

Koes also states, correctly I believe, that management varies substantially between practitioners³⁸. As the evidence supporting clinical decision models mounts, there comes a time when health professionals should base their clinical decisions foremost on patient-related indications in accordance with current best evidence, rather than therapist-related reasons such as their professional background and clinical technique preferences⁵⁰. The evidence guiding treatment prescription for low back pain hasn't stopped evolving yet, but the work of the authors referred to by Hancock et al, and in these invited commentaries, are a major step—in fact a quantum leap—from the level 5 evidence informing clinical decision-making of barely a decade ago.

As Hancock et al note, low back pain is a heterogeneous disorder and it is unreasonable to expect one mode of treatment to be effective for all patients. Over the past decade, the evidence guiding treatment has ever more strongly asserted that treatment decisions about patients with low back pain should be based on patient-related factors gleaned from the clinical examination, using evidence-based models matching intervention to specific clinical factors. Ten years on, the question remains: "Clinicians and researchers who treat and study patients with low back pain: are you listening?"⁵¹

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