Clinical Prediction Rules: Time to Sacrifice the Holy Cow of Specificity?

It was with interest that I read the recently published editorial in this journal challenging the “sacred cow” of passive intervertebral joint motion evaluation (PIVM, PAVM)¹⁻³ as the cornerstone of orthopaedic manual therapy (OMT) clinical reasoning. Just as with the domesticated bovine species, the sanctified milk of sacred cows can taste wonderful when fresh but it may become less palatable when let out of the fridge too long.

As a new graduate of an IFOMT-recognized post-graduate OMT program, it was my perception that I could identify specific inter-segmental spinal motion impairments and precisely restore normal segmental function to that one inter-vertebral level through OMT techniques. With the passage of 27 years of an OMT-based Physiotherapy practice, ongoing professional development, and the gradual personal evolution from an authority-based to an evidence-based, clinical reasoning approach, the milk in my OMT glass seems to smell a bit funky.

The clinical prediction rules of researchers such as Childs, Flynn, Cleland, and Fritz et al⁴⁻⁷ do not reduce clinicians to mere technicians following a recipe format of treatment. These prediction rules are not rules of clinical conduct that must be followed blindly. Instead, they allow us to predict with reasonable certainty that a given clinical intervention will affect a positive outcome on the patients fulfilling criteria identified in these rules.

One danger these “rules” bring is when they fall into the hands of technocrats and are subsequently interpreted as what must be done rather than what might be done. In 1987 the Quebec Task Force (QTF) on Whiplash Associated Disorders (WAD)⁸ developed the WAD classification system solely for the purpose of guiding future research in the field. In many regions, this classification system has now become accepted as the primary predictor of recovery following motor vehicle collision by many payers of services with little to no regard of the individual client’s specific injuries or the original intent of the QTF panel⁹. We must not allow the use of the word “rules” to take on such a literal translation by external parties, particularly the payers of our services and our own regulatory bodies.

I personally applaud the above-mentioned researchers⁴⁻⁷ for their willingness to show us that the OMT emperor of passive intervertebral joint motion evaluation in fact has no --or disappointingly few-- clothes. The concept that the patient may be anaesthetized while we, the all knowing--all palpating clinicians, assess the biomechanical pathology and select the appropriate OMT procedure based on an evaluation procedure that has repeatedly been demonstrated to have unacceptable reliability¹⁰ and then re-evaluate the outcomes using the same unreliable assessment tools must be openly questioned. Analysis by way of PIVM and PAVM techniques forms an integral part of my regular patient analysis with the clear knowledge that, when used in isolation, they are, at least in my hands, reliably unreliable.

The use of clinical prediction rules assist us in pre-selecting those candidates best suited to respond positively to OMT procedures. In my opinion, a multi-modal battery of assessment tools including motion palpation procedures may then guide the therapist to at least a sub-region and perhaps to one target spinal segment that would benefit from our care. This comprehensive assessment approach has been suggested to be the most efficacious approach at least with regard to the clinical diagnosis of sacroiliac joint pathology¹¹.

I doubt that few current practitioners of OMT will wish to return to the days of performing only gross regional manipulations under heavy traction with little to no regard for segmental localization¹². Within the field of OMT, new procedures and clinical reasoning concepts are rapidly evolving including Mulligan’s synthesis of being guided by at least semi-specific therapist-applied segmental OMT procedures concurrent with the patient’s symptomatic responses^{14,15}. Although capable of demonstrating high levels of positive clinical treatment outcomes^{16,17} and meeting reasonable criteria of face validity¹⁸, these recent developments are, as yet, awaiting investigation into their reliability as evaluative tools.

It would seem that manual medicine practitioners are not just yet faced with the unpleasant task of taking “old Betsy” the sacred segmental specificity cow to the stockyards just because some her milk is a bit off. As Dr. Huijbregts, I will continue to pour myself a nice long glass of motion palpation milk on a regular basis but I will also take a good sniff before I drink.

Jack Miller BSc(PT), Dip Manip Ther (NZ), MCTA, FCAMT

REFERENCES

1. Maitland GD. *Vertebral Manipulation*. London, UK: Butterworth, 1977.
2. Stoddard A. *Manual of Osteopathic Technique*. London, UK: Hutchinson, 1974.
3. Hartman L. *Handbook of Osteopathic Technique*. London, UK: Hutchinson, 1983.
4. Childs JD, Fritz JM, Flynn TW, Irgang JJ, Johnson KK, Majkowski GR, Delitto A. A clinical prediction rule to identify patients with low back pain most likely to benefit from spinal manipulation: A validation study. *Ann Intern Med* 2004;141:920–928.
5. Flynn T, Fritz J, Whitman J, Wainner R, Magel J, Rendeiro D, et al. A clinical prediction rule for classifying patients with low back pain who demonstrate short-term improvement with spinal manipulation. *Spine* 2002;27:2835–2843.
6. Fritz JM, Childs JD, Flynn TW. Pragmatic application of a clinical prediction rule in primary care to identify patients with low back pain with a good prognosis following a brief spinal manipulation intervention. *BMC Family Practice* 2005;6:29.
7. Cleland JA, Childs JD, Fritz JM, Whitman JM, Eberhart SL. Development of a clinical prediction rule for guiding treatment of a subgroup of patients with neck pain: Use of thoracic spine manipulation, exercise and patient education. *Phys Ther* 2007;87:9–23.
8. Spitzer W, et al. Quebec Task force on Whiplash Associated Disorders, *Spine* 1995;20:8S–73S.
9. Financial Services Commission of Ontario. *Statutory Accident Benefits Schedule*. Toronto, ON: Province of Ontario, 1996.
10. Seffinger, M, et al. Reliability of spinal palpation for diagnosis of back and neck pain: A systematic review of the literature. *Spine* 2004;29:413–425.
11. Huijbregts P. Sacroiliac joint dysfunction: Evidence-based diagnosis. *Ortho Div Review* 2004;May-June;18–44.
12. Cyriax J. *Illustrated Manual of Orthopaedic Medicine*. London, UK: Balliere Tindall, 1983.
13. Mulligan BR. *Manual Therapy “NAGS”, “SNAGS”, “MWMS” etc.* 5th ed. Wellington, New Zealand: PlaneView Services, 2004.
14. Hall T, Chan HT, Christensen L, Odenthal B, Wells C, Robinson K. Efficacy of a C1-C2 self-sustained natural apophyseal glide (SNAG) in the management of cervicogenic headache. *J Orthop Sports Phys Ther* 2007;37:100–107.
15. Miller J. The Mulligan Concept. How: Clinical application. When: Clinical reasoning. Why: Clinical research. *Ortho Div Review* 2006; May-June.
16. Portney MP, Watkins L. *Foundations of Clinical Research: Applications to Practice*. 2nd ed. Upper Saddle River, NJ: Prentice Hall, 2000.