

Research Into Osteopathic Manipulative Medicine: Steps on the Evidence Pyramid

Leslie M. Ching, DO

Financial Disclosures:
None reported.

Support: None reported.

Address correspondence to
Leslie M. Ching, DO,
Oklahoma State University
College of
Osteopathic Medicine,
Department of Osteopathic
Manipulative Medicine,
1111 W 17th St,
Tulsa, OK 74107-1898.

E-mail:
leslie.ching@okstate.edu

Submitted
January 31, 2016;
accepted
February 5, 2016.

An evidence pyramid comprises various sources of information. Although the pyramid can vary depending on the source, in general, the bottom of the evidence pyramid includes ideas and expert opinion (weakest evidence); the middle steps of the pyramid include case reports followed by cross-sectional studies, case control studies, cohort studies, and randomized controlled trials; and at the top are systematic reviews and meta-analyses (strongest evidence). In biomedical research, the pyramid represents a logical, stepwise progression toward the ultimate goal of providing high-quality evidence to guide clinical practice.

Osteopathic manipulative medicine has traditionally had an empirical basis rather than a research basis. Rigorous studies of concept or efficacy for osteopathic manipulative treatment (OMT) have not been robust. However, this tradition is beginning to change. In the current issue of *The Journal of the American Osteopathic Association (JAOA)*, 7 articles¹⁻⁷ at different steps in the evidence pyramid—and across varied populations—highlight important areas of osteopathic research.

In their review article, Hitscherich et al¹ provide an excellent introduction to the novel field of glymphatics. The authors pose thought-provoking research questions for investigating the role of OMT in manipulating the glymphatic system. Theoretical opportunities include the clearance of interstitial soluble proteins that are implicated in some neurodegenerative diseases, such as Alzheimer disease, and head injuries, such as concussions. Although the difficulties in conducting such a study are numerous, the potential clinical implications are huge.

Furthering the ideas of Hitscherich et al, a case report² and a SURF article³ describe the resolution of postconcussive symptoms after OMT, and their reports align with the findings of a 2015 case series.⁸ In the report by Guernsey et al,³ symptoms resolved after a single OMT session; this resolution continued at 1-week follow-up. Although such

a rapid response may seem too good to be true, in my experience, OMT substantially ameliorates postconcussion syndrome. The rapidity of response in both reports^{2,3} seems to be related to the severity of the concussion; history of concussions, head injuries, or major trauma; and the psychological mindset of the patient.

Another case report, by Alexander,⁴ describes a patient with new daily persistent headache. He found OMT to be effective after other modalities, including medication, had failed. Biomechanical causes of headaches are important yet often overlooked in workups. In this report, 40 OMT sessions occurred over 1.5 years and ultimately resolved the patient's symptoms. Alexander⁴ discusses the possible physiologic causes underlying this patient's case.

These reports²⁻⁴ help to build evidence for the use of OMT in managing concussions and headache. However, what is really needed is a large-scale study. Building this study would require a consistent referral base or perhaps a practice-based research network (PBRN), such as the Consortium for Collaborative Osteopathic Research Development-PBRN at the University of North Texas Health Sciences Center in Fort Worth or DO-Touch.NET at the A.T. Still University in Kirksville, Missouri.

Whereas these case reports²⁻⁴ support the clinical use of OMT in younger patients—teenagers in the reports by Castillo et al² and Alexander⁴ and a 27-year-old in the report by Guernsey et al³—Channell et al⁵ focus on the use of OMT in different age groups. They report on a survey of American Academy of Osteopathy (AAO) members about their use of OMT techniques for a variety of conditions. Members of the AAO are more likely to use OMT on a regular basis, so the findings of Channell et al⁵ are not consistent with previously published findings.⁹ However, Channell et al⁵ do help to illustrate how OMT is used in elderly patients among those physicians. The musculoskeletal, respiratory, and neurologic systems, which have

support in the research literature, were used most commonly in this population. It would be interesting to see additional breakdown of specific diagnoses for which OMT was used.

Toward the top of the evidence pyramid, this issue of the *JAOA* also includes 2 articles from Licciardone and colleagues^{6,7} based on the OSTEOPATHIC Health outcomes In Chronic low back pain (OSTEOPATHIC) Trial, which enrolled 455 patients with chronic low back pain into a randomized, double-blind, sham-controlled study. One article⁶ investigated the use of scales for pain intensity and back-specific function to delineate which patients respond best to OMT. Their findings could be helpful in future studies of low back pain or to guide treatment decision making for patients with low back pain. The other article⁷ looked at the recovery rates after OMT was applied to patients with chronic low back pain, finding that one-fifth to one-fourth of patients fit the criteria for recovery. As the authors note, OMT can be more cost-effective and clinically effective than other, standard medical interventions. Licciardone et al^{6,7} also conclude that the management of low back pain with OMT is more effective than previously reported by the latest Cochrane review on the management of chronic low back pain with spinal manipulation.¹⁰

That systematic reviews and meta-analyses are at the top of the evidence pyramid reflects 1 reason why the OSTEOPATHIC Trial is so significant, as it contradicts the Cochrane review¹⁰ on the management of chronic low back pain with spinal manipulation. As Licciardone et al^{6,7} note, the Cochrane review¹⁰ included low-quality studies and differences in treatment approaches. Although the OSTEOPATHIC Trial was only 1 trial, it used the National Institutes of Health Task Force on Research Standards for Chronic Low Back Pain. Hopefully it represents the start of other large studies demonstrating the efficacy of OMT in chronic low back pain.

Together, these 7 articles¹⁻⁷ represent the turning of the tide in strengthening the evidence base for osteopathic manipulative medicine. The fact that several students and residents were involved in producing these articles is additionally encouraging—they are the key to continuing to strengthen the research base for osteopathic medicine (doi:10.7556/jaoa.2016.029)

References

1. Hitscherich K, Smith K, Cuoco JA, et al. The glymphatic-lymphatic continuum: opportunities for osteopathic manipulative medicine [review]. *J Am Osteopath Assoc*. 2016;116(3):170-177. doi:10.7556/jaoa.2016.033.
2. Castillo I, Wolf K, Rakowsky A. Concussions and osteopathic manipulative treatment: an adolescent case presentation. *J Am Osteopath Assoc*. 2016;116(3):178-181. doi:10.7556/jaoa.2016.034.
3. Guernsey DT III, Leder A, Yao S. Resolution of concussion symptoms after osteopathic manipulative treatment: a case report [SURF]. *J Am Osteopath Assoc*. 2016;116(3):e13-e17. doi:10.7556/jaoa.2016.036.
4. Alexander J. Resolution of new daily persistent headache after osteopathic manipulative treatment [case report]. *J Am Osteopath Assoc*. 2016;116(3):182-185. doi:10.7556/jaoa.2016.035.
5. Channell MK, Wang Y, McLaughlin MH, Ciesielski J, Pomerantz SC. Osteopathic manipulative treatment for older patients: a national survey of osteopathic physicians. *J Am Osteopath Assoc*. 2016;116(3):136-143. doi:10.7556/jaoa.2016.030.
6. Licciardone JC, Gatchel RJ, Aryal S. Targeting patient subgroups with chronic low back pain for osteopathic manipulative treatment: responder analyses from a randomized controlled trial. *J Am Osteopath Assoc*. 2016;116(3):156-168. doi:10.7556/jaoa.2016.032.
7. Licciardone JC, Gatchel RJ, Aryal S. Recovery from chronic low back pain after osteopathic manipulative treatment: a randomized controlled trial. *J Am Osteopath Assoc*. 2016;116(3):144-155. doi:10.7556/jaoa.2016.031.
8. Chappell C, Dodge E, Dogbey GY. Assessing the immediate effect of osteopathic manipulation on sports related concussion symptoms. *Osteopath Fam Phys*. 2015;7(4):30-35.
9. Johnson SM, Kurtz ME. Diminished use of osteopathic manipulative treatment and its impact on the uniqueness of the osteopathic profession. *Acad Med*. 2001;76(8):821-828.
10. Rubinstein SM, van Middelkoop M, Assendelft WJ, de Boer MR, van Tulder MW. Spinal manipulative therapy for chronic low-back pain. *Cochrane Database Syst Rev*. 2011;(2):CD008112. doi:10.1002/14651858.CD008112.pub2.