Improved shoulder ROM is an enhancement in quality of life, mobility, and stability for individuals with PD. Current OMT research has the potential to demonstrate the benefits it can offer in PD management. (doi:10.7556/jaoa.2016.133)

Hollis H. King, DO, PhD
University of California,
San Diego School of Medicine

References

1. Samano K. DOs, researchers awarded $1 million to conduct osteopathic research. *The DO*. June 22, 2016. http://thedo.osteopathic.org/2016/06/dos-researchers-awarded-1-million-to-conduct-osteopathic-research/. Accessed August 12, 2016.
2. Wells MR, Giantinoto S, D'Agate D, et al. Standard osteopathic manipulative treatment acutely improves gait performance in patients with Parkinson's disease. *J Am Osteopath Assoc*. 1999;99(2):92-98.
3. Yoritaka A, Shimo Y, Takahashi M, et al. Motor and non-motor symptoms of 1453 patients with Parkinson's disease: prevalence and risks. *Parkinsonism Relat Disord*. 2013;19(8):725-731. doi:10.1016/j.parkreldis.2013.04.001.
4. Donoyama N, Ohkoshi N. Effects of traditional Japanese massage therapy on various symptoms in patients with Parkinson's disease: a case-series study. *J Altern Complement Med*. 2012;18(3):294-299. doi:10.1089/acm.2011.0148.
5. Donoyama N, Suoh CS, Ohkoshi N. Effectiveness of Anma massage therapy in alleviating physical symptoms in outpatients with Parkinson's disease: a before-after study. *Complement Ther Clin Pract*. 2014;20(4):251-261. doi:10.1016/j.ctcp.2014.07.010.

Manual Therapy and OMT May Be of Benefit in the Management of Somatosensory Tinnitus

Oostendorp RA, Bakker I, Elvers H, et al. Cervicogenic somatosensory tinnitus: an indication for manual therapy plus education? part 2: a pilot study. *Man Ther*. 2016;23:106-113. doi:10.1016/j.math.2016.02.006.

Manual therapy researchers in the Netherlands conducted a pilot study that evaluated the effect of manual therapy Utrecht (MTU) in conjunction with tinnitus education on patients with cervicogenic somatosensory tinnitus (CST). Manual therapy Utrecht is a very gentle, low-velocity passive movement of joints of the spine, pelvis, and extremities. Of an initial population of 506 patients who reported having CST, 126 met the inclusion criteria for 1 of 2 groups: a group of patients with CST (n=67) and a subgroup with CST and tinnitus sensitization (TS) (n=55). The inclusion criteria for the CST alone group were neck pain; impairment of cervical range of motion, preferably rotation; modulation of tinnitus by head and neck movements and posture; and tenderness of cervical-occipital muscles. Five of the following criteria had to be met to be placed in the TS subgroup: widespread hyperalgesia and pain remote from the symptomatic region, such as shoulder and back pain; impairment in quality of vision; burning eyes; modulation of tinnitus by psychological stress, such as sound phobia; modulation of tinnitus by sensory stimulation; headache; dizziness; or tingling in arms or legs.

The outcome measure was a tinnitus intensity visual analog scale (VAS), which ranged from 0 (no tinnitus) to 100 (worst intensity of tinnitus). The VAS data were collected before and after the MTU intervention. Therapy sessions were 30 to 60 minutes, and each patient received 7 to 13 sessions.

The results showed statistically significant reductions in VAS scores for both groups (CST alone, P=.01; CST and TS, P<.001), and the differences between the groups was clinically significant

($P<.001$). The results were also deemed clinically significant for the CST and TS group.

This study is consistent with research showing the benefit of osteopathic manipulative treatment (OMT) in reducing symptoms in patients with somatosensory tinnitus.[1] Although this study was a pilot study, results suggest that MTU and OMT may be beneficial in managing conditions like tinnitus. (doi:10.7556/jaoa.2016.134)

Hollis H. King, DO, PhD
University of California,
San Diego School of Medicine

Reference

1. Alexander J, Kurisu M, Fleming JE, King H. Response of tinnitus to osteopathic manipulation [abstract C21]. *J Am Osteopath Assoc.* 2015;115(12):e82-e83.

Manual Therapy Shown To Improve Diabetic Foot Ulcer Healing

Joseph LH, Paungmali A, Dixon J, et al. Therapeutic effects of connective tissue manipulation on wound healing and bacterial colonization count among patients with diabetic foot ulcer [published online February 2, 2016]. *J Bodyw Mov Ther.* 2016. doi.org/10.1016/j.jmbt.2016.01.010.

Physical therapy researchers in Thailand and Malaysia studied the effects of connective tissue manipulation on patients with diabetic foot ulcer. Connective tissue manipulation is a manual therapy technique developed in Germany in the 1930s that uses fingertip strokes to stretch both elastic and viscous components of tissues in therapeutic reflex zones that share the same segmental innervations with the connective tissue zones. This technique stimulates parasympathetic function, resulting in reflex vasodilation and increased circulation to the peripheral extremities. For this intervention, contact was made over the arterial zone of the legs, which is around the sacrum and borders of the iliac crest. From the osteopathic perspective, this intervention appears to be an application of somatovisceral reflex theory and the manually guided forces most similar to the osteopathic manipulative procedures of the Fascial Distortion Model.[1]

Inclusion criteria for this study included fasting blood glucose ≥110 mg dL^{-1}, blood glucose 2 hours after glucose load ≥180 mg dL^{-1}, and the presence of a noninfected diabetic foot ulcer on the plantar aspect of the foot with Wagner classification of grade 1 and 2 (skin ulcer). Exclusion criteria included patients with current hemodialysis, surgical history of lower limb revascularization, bleeding disorders, glycosylated hemoglobin more than 9%, and the use of immunosuppressant agents.

Twenty patients with a diagnosis of type II diabetes mellitus completed the study. Each participant received conventional treatment for diabetic foot ulcer, and 10 received connective tissue manipulation, in addition to the conventional treatment, twice per week for 6 weeks.

The outcome measures, which were collected before and after the interventions, were percentage of wound healing area and bacterial colonization count. Baseline percentage of wound healing area and bacterial colonization count were not significant between groups. Although paired *t* tests showed a significant percentage of improvement in wound healing area for both groups after 6 weeks ($P<.05$), the percentage of wound healing area was 57% in the connective tissue manipulation group and 28% in the control group. Likewise, the bacterial colonization count in both groups showed significant improvement ($P<.05$). However, the connective tissue manipulation in addition to conventional treatment led to a 6.4% mean reduction of bacterial burden on the wound surface compared with only 3.5% reduction in the group that received conventional treatment only. This bacterial colonization count reduction in the group that received connective tissue manipulation was significantly greater and clinically significant. These results suggest