



Rebecca Blum-Kingsley, OMS-III, Anne Marie Zeller, DO, MSc

DeBusk College of Osteopathic Medicine, Lincoln Memorial University, Knoxville, TN 37932

Abstract

Background: Osteopathy and manual/manipulative medicine have long been sought by oncological patients but there is a distinct lack of clinical research on this patient population. While the individual manual/manipulative medicine specialties have conducted their own research, there has been little collaboration between fields. A distinct desire has emerged among patients for a more integrative approach to regular chemo- and radio-therapy, to address common side effects that impact patients’ everyday lives, such as cancer-related fatigue, lymphedema, and chronic pain. Objectives: To identify current research on manual treatment application to oncological patients across osteopathic, physiotherapeutic, and chiropractic fields, and offer a manual treatment approach for these patients. Method: A PubMed search to collect relevant research on the above fields, including articles published in the last five years in active research fields (physiotherapy) and in the last ten years in less active fields (Osteopathy). Results: Current research across all fields demonstrates that manual and manipulative medicines have a significant impact at improving patients’ quality of life, pain, cancer related fatigue, and at reducing lymphedema. Conclusion: While research concerning osteopathic treatment of oncologic patients has been limited in quantity, quality, and scope, the existing research in osteopathic and other manual/manipulative medicine fields has repeatedly demonstrated patient improvements throughout oncologic treatment when these services are utilized Patients have expressed a distinct need for these services. More research is required to find the extent of the benefit of an osteopathic approach to these patients.

Introduction

Osteopathy and manual medicine have long been sought after by oncological patients but there is a distinct lack of clinical research on the effects this may have on this patient population^{1-2,7,9,16}. While the individual manipulative medicines have conducted their own research, there has been little crosstalk between the fields. A distinct desire has emerged among patients for a supplement to regular chemo- and radio-therapy, to help combat common side effects that impact patients’ activities of daily living, such as cancer related fatigue (CRF), lymphedema, and chronic pain^{2,4,9,12}. Currently, manual, and manipulative medicine options are not often discussed, leaving a gap between the provider and patient, that the patient often fills themselves^{7,9}. The aim of this literature review is to identify the current research surrounding oncologic manual treatments across osteopathic, chiropractic, and physiotherapeutic fields and to establish what patient need currently exists in oncologic medicine and recommend treatment approaches based on the currently published research.

Methods

A PubMed search was conducted using the key words “Osteopath”, “OMT”, "Osteopathic Manipulative Treatment”, “Cancer”, “Oncology”, “Physical Therapy”, “Integrative Approach” “Chiropractic” Inclusion Criteria: Studies concerning OMT use in the oncologic patient, OMT use in the general population as it pertains to cancer treatments, physical therapy and chiropractic studies concerning cancer patients published within the last five years, and OMT studies within the last ten years. Exclusion criteria: Studies without the full text available, studies without available data, and studies that reproduced existing results.

Results

Osteopathic, manual, and manipulative treatments have been shown to be effective in cancer patients to aid in lymphedema, pain, CRF, mood, and QoL (quality of life)^{1, 3-6, 8, 10-15, 17}. Lymphedema has been studied more extensively than many other cancer-related conditions. Complex Decongestive Therapy (CDT) is the current standard of care for lymphedema, but many studies show Manual Lymphatic Drainage (MLD), a subset of CDT, is effective at treating lymphedema^{4,8,15}, especially when CDT/MLD are utilized early post-surgery^{13,14,17}. Pre-operative treatments to address existing issues or help strength at-risk structures have also been shown to be effective in improving patient outcomes^{5,6}. Myofascial Induction Therapy (MIT) is a fascial based treatment approach that has also been shown to reduce pain and increase ROM in affected areas^{3,10}.

Treatment



Myofascial Release for the Thoracic Inlet: With both hands on either side of the thoracic aperture, apply gentle pressure and take the fascia to its place of ease in rotation, side-bending, and flexion/extension. Hold this position until the tissue begins to release.

Contraindications to Myofascial Release
Absolute: Absence of somatic dysfunction, Lack of consent
Relative: Fractures, open wounds, soft tissue or bony infections, abscesses, DVT, anticoagulation condition, disseminated or focal neoplasm, recent post-op conditions over the site of proposed treatment (wound dehiscence), aortic aneurysm

Myofascial Release for the Diaphragm: With both hands placed distal to the costal margin on either side of the rib cage, apply gentle pressure and take the fascia to its place of ease in rotation, side-bending, and flexion/extension. Hold this position until the tissue begins to release.



Popliteal Spread: With both hands placed on either side of the superior popliteal space, apply gentle traction force, and hold this position until the tissue begins to release. Repeat in the inferior popliteal space.

Pedal (Lymphatic) Pump: Brace both hands on the plantar side of the patient’s feet, pushing the patient’s feet into dorsiflexion. Apply gentle rhythmic force at approximately two oscillations per second for one to two minutes.

Contraindications for Lymphatic Pumps
Absolute: Abscess, localized infection, bacterial infection with high fever, bone fractures, active or metastatic cancer (disputed), anticoagulation condition, nearby surgical wounds, lymphoma, leukemia
Relative: Osteoporosis, DVT, recent abdominal surgery



Discussion

Current research in combined manual, manipulative, and osteopathic medicine fields has repeatedly shown significant improvement in cancer related symptoms, such as lymphedema, pain, CRF, and QoL with the utilization of manual and manipulative medicines^{1,3-6,8,10-15,17}. Many studies have demonstrated that manual and manipulation treatments work but are underutilized mostly due to lack of physician and provider awareness and confidence in prescribing these treatments. The rationale behind these treatments align with the osteopathic respiratory-circulatory model. Utilization of this model may help bolster the immune system and has been shown to help open lymphatic drainage and reduce edema^{4,8,13-15,17}. By addressing issues along lymphatic choke points and resolving musculoskeletal issues associated with work of breathing, the body’s own natural movement of lymph fluid may be able to resume a natural course. It is currently taught that lymphatic pumps may allow metastatic cancer to spread. Currently, there is no research to support this idea, and closer look into this claim could prove a great benefit to patients. Limitations: Research in the osteopathic field on oncologic patients has been neglected compared to other fields of research. Sample sizes are often small, and studies are often not blinded. High patient burdens in accessing these fields also prevent them from being applied more widely. Future Research: With repeated demonstration that manual, manipulative, and osteopathic medicine can aid in many outcomes, the need for more osteopathic manipulation in oncologic populations becomes clear. Lymphedema has shown many benefits to a hands-on Osteopathic approach, and further research into the benefit these treatments may provide is needed, especially concerning the use of lymphatic pumps in oncologic patients. Patients have proven a need and willingness to pursue osteopathic treatment and more research is required to find the extent of the benefit of an osteopathic approach to these patients.

References

Arienti C, Bosisio T, Ratti S, Miglioli R, Negrini S. Osteopathic Manipulative Treatment Effect on Pain Relief and Quality of Life in Oncology Geriatric Patients: A Nonrandomized Controlled Clinical Trial. *Integr Cancer Ther*. 2018;17(4):1163-1171. doi:[10.1177/1534735418796954](#) .

Belsky JA, Stanek JR, Rose MJ. Investigating the safety and feasibility of osteopathic medicine in the pediatric oncology outpatient setting. *Journal of Osteopathic Medicine*. 2022;122(8):423-429. doi:[10.1515/jom-2021-0246](#)

Castro-Martin E, Galiano-Castillo N, Fernández-Lao C, Ortiz-Comino L, Postigo-Martin P, Arroyo-Morales M. Myofascial Induction Therapy Improves the Sequelae of Medical Treatment in Head and Neck Cancer Survivors: A Single-Blind, Placebo-Controlled, Randomized Cross-Over Study. *J Clin Med*. 2021;10(21):5003. doi:[10.3390/jcm10215003](#)

Cyr MP, Dostle R, Camden C, et al. Improvements following multimodal pelvic floor physical therapy in gynecological cancer survivors suffering from pain during sexual intercourse: Results from a one-year follow-up mixed-method study. *PLoS One*. 2022;17(1):e0262844. doi:[10.1371/journal.pone.0262844](#)

Fernández-Blanco R, Rincón-García D, Valero-Alcalde R, et al. Preoperative respiratory therapy in patients undergoing surgery for lung cancer: A randomized controlled trial. *Physiotherapy Research International*. 2022;n/a(n/a):e1973. doi:[10.1002/pri.1973](#)

Hara T, Kogure E, Kubo A, Kakuda W. Does pre-operative physical rehabilitation improve the functional outcomes of patients undergoing gastrointestinal cancer surgery? *J Phys Ther Sci*. 2021;33(3):299-306. doi:[10.1589/jpts.33.299](#)

Lüthi E. Link to external site this link will open in a new window, Diezi M, et al. Complementary and alternative medicine use by pediatric oncology patients before, during, and after treatment. *BMC Complementary Medicine and Therapies*. 2021;21:1-11. doi:[10.1186/s12906-021-03271-9](#)

Maria P de GJ, Maria P de GL, Jose P de GH, Fatima GGM de. Reduction of Arm Lymphedema Using Manual Lymphatic Therapy (Godoy Method). *Cureus*. 2022;14(8). doi:[10.7759/cureus.28374](#)

Munoz-Casabella A, Wahnner-Roedler DL, Croghan IT, Petterson TM, Fuehrer DL, Bauer BA. Use of Complementary and Integrative Medicine Among Patients With Glioblastoma Multiforme Seen at a Tertiary Care Center. *Glob Adv Health Med*. 2022;11:2164957X221078543. doi:[10.1177/2164957X221078543](#)

Ortiz-Comino L, Martín-Martín L, Galiano-Castillo N, et al. The effects of myofascial induction therapy in survivors of head and neck cancer: a randomized, controlled clinical trial. *Support Care Cancer*. 2022;31(1):49. doi:[10.1007/s00520-022-07482-9](#)

Roldan CJ, Thomas A, Samms N, Feng L, Huh B. Non-Invasive Pelvic Floor Rehabilitation in Cancer Population: An Incomplete Cohort. *Pain Physician*. Published online 2022.

Steel A. Link to external site this link will open in a new window, Tricou C, et al. The perceptions and experiences of osteopathic treatment among cancer patients in palliative care: a qualitative study. *Supportive Care in Cancer*. 2018;26(10):3627-3633. doi:[10.1007/s00520-018-4233-y](#)

Torres-Lacomba M, Prieto-Gómez V, Arranz-Martín B, et al. Manual Lymph Drainage With Progressive Arm Exercises for Axillary Web Syndrome After Breast Cancer Surgery: A Randomized Controlled Trial. *Physical Therapy*. 2022;102(3):pzab314. doi:[10.1093/ptj/pzab314](#)

Tsai KY, Liao SF, Chen KL, Tang HW, Huang HY. Effect of early interventions with manual lymphatic drainage and rehabilitation exercise on morbidity and lymphedema in patients with oral cavity cancer. *Medicine (Baltimore)*. 2022;101(42):e30910. doi:[10.1097/MD.00000000000030910](#)

Weyhe D, Obonyo D, Usilar V, Tabriz N. Effects of intensive physiotherapy on Quality of Life (QoL) after pancreatic cancer resection: a randomized controlled trial. *BMC Cancer*. 2022;22:520. doi:[10.1186/s12885-022-09586-1](#)

Wong CH, Sundberg T, Chung VC, Voiss P, Cramer H. Complementary medicine use in US adults with a history of colorectal cancer: a nationally representative survey. *Support Care Cancer*. 2021;29(1):271-278. doi:[10.1007/s00520-020-05494-x](#)

Wu X, Liu Y, Zhu D, Wang F, Ji J, Yan H. Early prevention of complex decongestive therapy and rehabilitation exercise for prevention of lower extremity lymphedema after operation of gynecologic cancer. *Asian Journal of Surgery*. 2021;44(1):111-115. doi:[10.1016/j.asjsur.2020.03.022](#)

Acknowledgements

Thank you to Sean Sullivan for his aid with our pictures. Thank you to Dr. Zeller for her support and guidance.