THE JOURNAL OF ALTERNATIVE AND COMPLEMENTARY MEDICINE
Volume 24, Numbers 9 and 10, 2018, pp. 855–858

DOI: 10.1089/acm.2018.29053.mfl

JACM

*EDITORIALS*

# Integrative Oncology: An Essential Feature of High-Quality Cancer Care

Moshe Frenkel, MD,[1,2] and Lynda G. Balneaves, PhD, RN[3]

**Moshe Frenkel, MD**
*University of Texas Medical Branch at Galveston*
*Institute of Oncology Meir Medical Center*

**Lynda G. Balneaves, PhD, RN**
*University of Manitoba*



Cancer is a major public health problem worldwide and is the second leading cause of death in the United States. There were an estimated 14.1 million cancer cases around the world in 2012, and this number is expected to increase to 24 million by 2035.[1] In the United States, the overall estimate of new cases of invasive cancer expected in 2018 is 1,735,350 cases, which is the equivalent of 4700 new cancers being diagnosed each day.[2]

Although conventional cancer treatments have greatly reduced cancer-related mortality, these therapies often produce adverse effects that negatively impact patients' quality of life (QOL).[3,4] Consequently, many cancer patients suffer from both the symptoms of cancer itself and the side effects related to conventional treatments. Patients' unmet needs in managing these symptoms, coupled with their desire to do everything possible to prevent a recurrence, regain their health, and improve their overall well-being, have created a demand for complementary and integrative medicine (CIM).[5–9]

It is estimated that up to 88% of people living with cancer use some form of CIM and its use is becoming an increasingly popular and visible component of oncology care.[10] In a recent systematic review of 45 National Cancer Institute-designated comprehensive cancer center websites, between 2009 and 2016, researchers found an increasing presence of integrative medicine content on the websites, and most centers provided some form of these services to patients and family members.[6]

As a result, integrative oncology has emerged as a scientific field that aims to address this interest through collaborative practice and rigorous research. Integrative oncology, as defined in a recent article, ''is a patient-centered evidence-informed field of cancer care that utilizes mind and body practices, natural products, and/or lifestyle modifications from different traditions alongside conventional cancer treatments.[11] Integrative oncology aims to optimize health, QOL, and clinical outcomes across the cancer care continuum and to empower people to prevent cancer and become active participants in their healthcare before, during, and beyond cancer treatment.''[11] This field has grown rapidly in the past decade, and integrative oncology practice has emerged in North America, Europe, the Middle East, and Asia.[5,12]

As integrative oncology has developed as a clinical specialty, so too has research on the efficacy and safety of CIM therapies in cancer care. In the past decade, researchers and clinicians at numerous academic centers worldwide have examined the potential supportive role of integrative oncology in symptom management and enhancing the QOL of cancer patients and their families.[13–15] In addition, recent

[1]Department of Family Medicine, The University of Texas Medical Branch at Galveston, Galveston, TX.
[2]Medical Director, Integrative Medicine Program, Institute of Oncology Meir Medical Center, Kfar Saba, Israel.
[3]College of Nursing, Rady Faculty of Health Sciences, University of Manitoba, Winnipeg, Manitoba, Canada.

studies suggest that CIM integration might have direct effect on survival.[16,17] Research in integrative oncology has now reached the point that clinical guidelines focusing on the role of integrative practices are being developed and endorsed by leading oncology organizations, including the American Society of Clinical Oncology and the Society for Integrative Oncology.[18]

CIM use by cancer patients, however, can be challenging to conventional healthcare professionals, many of whom have received limited training in integrative medicine and may be unaware of the growing body of evidence. There is also the concern that some patients may remove themselves from proven conventional treatment to pursue alternative therapies, at their peril.[19] As a result, dialogue between clinicians and patients about CIM, when they do occur, can be fraught with misunderstandings and biases. The resulting gap in communication may negatively impact the patient–clinician relationship and prevent future disclosures of CIM use.[20] It may also limit appropriate referrals to and use of integrative therapies that may be beneficial for patients in a given situation. In the absence of informed clinical guidance, patients may choose harmful, useless, ineffective, and costly therapies when effective CIM therapies may exist. Poor communication may also lead to a diminishment of patients' autonomy and sense of control over their treatment.[7,21]

As integrative oncology continues to expand as a clinical and research field, it is imperative that the gap in knowledge and limited communication about CIM between patients and clinicians be addressed through patient-centered and evidence-informed dialogue. Only through such an approach will integrative oncology shift from being a ''nice to have'' treatment approach to one considered to be an essential component of high-quality cancer care.

In this special issue of *JACM*, we encourage this dialogue by highlighting what is happening in the field of integrative oncology around the world. This special focus issue on integrative oncology offers multiple perspectives from North America, Europe, Middle East, and Asia that provide insight into the current state of integrative oncology practice, education, and research. The patient perspective is also present in this issue, as well as how integrative oncology may offer support to caregivers of patients affected by cancer.

## Overview of the Content

Overall, this special issue has three main components: clinical summaries, research articles, and commentaries.

### *Clinical summaries*

The clinical summaries were written by clinical leaders who have extensive experience in providing integrative oncology consultations and have engaged in academic research. These clinicians bring their unique and practical suggestions, based on evidence and clinical experience. Most of these summaries are more of a narrative review and not a systematic review of the literature. These summaries are not meant to be used as guidelines. Rather, they offer practical advice about how patients affected by cancer can be approached using integrative oncology, a glimpse of what is being done in different clinical and academic centers, and promising avenues of future scientific inquiries. Each of these articles cover key aspects of integrative oncology, including nutrition, dietary supplements, lifestyle changes, and complementary modalities. Together, these six articles address the practicality of integrative oncology in the leading types of cancer: lung cancer (by Frenkel et al.), breast cancer (by Lemanne and Maizes), prostate cancer (by Abrams), colon cancer (by Block et al.), gynecologic cancer (by Ben-Arye et al.), and pediatric cancer (by Ladas).

### *Research articles*

The next part of this special issue showcases innovative integrative oncology research from different parts of the world. Three clinical trials were included that examined the effect of complementary therapies on symptom management and QOL in breast cancer patients. Pelzer and Tröger from Serbia examined the safety and effect of mistletoe extract on neutropenia, fever, and overall QOL. Jong et al. from the Netherlands explored the impact of yoga on fatigue and QOL in women with breast cancer undergoing chemotherapy. Finally, Stoerkel et al. from the United States examined the effectiveness of a self-care toolkit that included a variety of mind–body techniques in addressing the distress experienced by women after breast cancer surgery. Together, these trials not only provide valuable evidence for clinicians caring for women across the breast cancer continuum but also highlight the need to expand integrative oncology trials to other cancer populations. Carlson et al. from Canada also point out in their methodological article the need for more pragmatic trials in integrative oncology to provide more ''real-world'' evidence for key stakeholders regarding the effectiveness and implementation. They use their ongoing trial of mindfulness versus *t'ai chi/qigong* to highlight how pragmatism can be measured in clinical trial development.

The interest in integrative oncology for the management of pain and other cancer-related symptoms is illustrated in several studies included in the special issue. Gentile et al. evaluated the effect of healing touch or oncologic massage on pain among American cancer outpatients in an observational study. Rossi et al. conducted a retrospective observational study to examine the effect of comprehensive integrative oncology care on reducing the adverse effects of anticancer therapy and cancer symptoms in Italian cancer patients. Eriksen et al.'s qualitative study on patients' perceptions of the role of acupuncture in treatment of insomnia, however, reveals that many cancer patients lack knowledge about the potential role of complementary therapies in cancer care and require education to ensure their needs are being met.

With regard to the safety of integrative oncology, three studies were included in the special issue that illustrate the disconnect that may exist between patients and oncology healthcare professionals with regard to complementary therapies. Luo and Asher's study demonstrates the persistent use of dietary supplement during cancer treatments by adult cancer patients in a regional cancer center in the United States. In contrast, Stan et al.'s study found a striking discordance between complementary therapy use by patients and documentation within electronic health records. The lack of communication between cancer patients and clinicians about integrative oncology was further highlighted in Kumbamu et al.'s qualitative study, which explored a limited number of interactions between patients and oncologists about complementary therapy use.

Finally, the research article by Jolliffe et al. highlights how integrative oncology may support not only patients but also their informal caregivers. Family members and friends who attended a self-management education intervention in the United Kingdom were found to report improvement in self-management of their own healthcare needs.

A brief research letter rounds out the research portion of the special issue. Aoshima et al.'s summary provides insight into the use of dietary supplements among Japanese cancer patients.

### *Commentaries*

The final part of the special issue comprises commentaries. These commentaries bring viewpoints on multiple aspects of integrative oncology. With the increased popularity and use of integrative oncology, questions are being raised regarding how to educate healthcare team members on this new emerging field of knowledge. Two commentaries on integrative oncology education were invited: one from the United States, which describes a new National Institutes of Health-funded program for integrative oncology scholars (by Zick et al.), and the other from Switzerland that describes a training program for oncology physicians regarding how to provide advice about integrative medicine use (by Witt et al.).

Another invited commentary by Herman addressed the problematic issue of the economics of integrative oncology. Owing to limited research, the economic value of integrative oncology within conventional cancer care settings is still questioned by decision-makers. Herman offers key recommendations of how this gap in knowledge can be addressed and how integrative oncology clinicians can help patients faced with the ''financial toxicity'' of cancer diagnosis.

Several commentaries also provided insight into integrative oncology models of care, as well as the accompanying challenges to offering innovative care strategies in conventional cancer care settings. The commentary by Dhruva et al. draws on their experiences at an integrative oncology center at a major academic health center in the United States and the barriers they have encountered in providing timely, efficient, and equitable integrative oncology care. Unique care models and services are proposed that may improve patient access to integrative oncology. From India, Gundeti et al. present another model of integrative oncology that incorporates traditional Ayurvedic medicine into conventional cancer care. The scope of Ayurvedic therapies in the prevention and management of cancer and the challenges to the provision of integrative oncology are discussed. The final model of care described by Chiaramonte et al. is the unique collaboration between a radiation oncology proton therapy program and an integrative wellness program that aims to promote patient well-being during treatment.

Sabin shares his personal experience of being an exceptional responder after the use of integrative oncology. He makes a strong case for the knowledge that may be gained through the systematic evaluation of his and others' experiences with spontaneous cancer remission and the hope that it may provide in better understanding cancer and its treatment.

The development of this special issue on integrative oncology was not without its challenges—we received >70 submissions from around the world and struggled to decide on a final list of articles that would do justice to the reality of integrative oncology clinical practice internationally while acknowledging the importance of rigorous empirical studies in advancing the field. There exists a dissonance between what is done at the bedside and what is researched. If integrative oncology is to truly become an essential part of cancer treatment and care, this discrepancy must be acknowledged and efforts made to form partnerships between clinicians, researchers, patients, and decision-makers to develop the pragmatic clinical research needed to enhance our understanding of the value of integrative oncology. The articles included in this issue, as well as those that we were unable to include, leave us optimistic that the future of integrative oncology will be promising.

## Author Disclosure Statement

No competing financial interests exist.

## References


1. World Cancer Research Fund International. Cancer facts and figures—Worldwide data. Online document at: www.wcrf.org/int/cancer-facts-figures/worldwide-data, accessed January 1, 2018.
2. Siegel RL, Miller KD, Jemal A. Cancer statistics, 2018. CA-Cancer J Clin 2018;68:7–30.
3. Findley PA, Sambamoorthi U. Preventive health services and lifestyle practices in cancer survivors: A population health investigation. J Cancer Surviv 2009;3:43–58.
4. National Cancer Institute. Side effects. Online document at: www.cancer.gov/about-cancer/treatment/side-effects, accessed March 22, 2018.
5. Mao JJ. Advancing the global impact of integrative oncology. J Natl Cancer Inst Monogr 2017;2017:lgx001.
6. Yun H, Sun L, Mao JJ. Growth of integrative medicine at leading cancer centers between 2009 and 2016: A systematic analysis of NCI-designated comprehensive cancer center websites. J Natl Cancer Inst Monogr 2017;2017:lgx004.
7. Frenkel M, Cohen L. Effective communication about the use of complementary and integrative medicine in cancer care. J Altern Complement Med 2014;20:12–18.
8. Bauml JM, Chokshi S, Schapira MM, et al. Do attitudes and beliefs regarding complementary and alternative medicine impact its use among patients with cancer? A cross-sectional survey. Cancer 2015;121:2431–2438.
9. Mao JJ, Palmer SC, Straton JB, et al. Cancer survivors with unmet needs were more likely to use complementary and alternative medicine. J Cancer Surviv 2008;2:116–124.
10. Horneber M, Bueschel G, Dennert G, et al. How many cancer patients use complementary and alternative medicine: A systematic review and metaanalysis. Integr Cancer Ther 2012;11:187–203.
11. Witt CM, Balneaves LG, Cardoso MJ, et al. A comprehensive definition for integrative oncology. J Natl Cancer Inst Monogr 2017;2017:lgx012.
12. Shalom-Sharabi I, Frenkel M, Caspi O, et al. Integrative oncology in supportive cancer care in Israel. Integr Cancer Ther 2018;17:697–706.
13. Carlson LE. Distress management through mind-body therapies in oncology. J Natl Cancer Inst Monogr 2017; 2017:lgx009.
14. Zia FZ, Olaku O, Bao T, et al. The National Cancer Institute's Conference on Acupuncture for Symptom Management in Oncology: State of the science, evidence, and research gaps. J Natl Cancer Inst Monogr 2017;2017:lgx005.

15. Frenkel M, Cohen L, Peterson N, et al. Integrative medicine consultation service in a comprehensive cancer center: Findings and outcomes. Integr Cancer Ther 2010;9:276–283.
16. Frenkel M, Sierpina V, Sapire K. Effects of complementary and integrative medicine on cancer survivorship. Curr Oncol Rep 2015;17:445.
17. Cohen L, Jefferies A. Comprehensive lifestyle change: Harnessing synergy to improve cancer outcomes. J Natl Cancer Inst Monogr 2017;2017:lgx006.
18. Lyman GH, Greenlee H, Bohlke K, et al. Integrative therapies during and after breast cancer treatment: ASCO endorsement of the SIO Clinical Practice Guidelines. J Clin Oncol 2018;36:2647–2655.
19. Johnson SB, Park HS, Gross CP, et al. Complementary medicine, refusal of conventional cancer therapy, and survival among patients with curable cancers. JAMA Oncol 2018 [Epub ahead of print]; DOI:10.1001/jamaoncol.2018.2487.
20. Davis EL, Oh B, Butow PN, et al. Cancer patient disclosure and patient-doctor communication of complementary and alternative medicine use: A systematic review. Oncologist 2012;17:1475–1481.
21. Tasaki K, Maskarinec G, Shumay DM, et al. Communication between physicians and cancer patients about complementary and alternative medicine: Exploring patients' perspectives. Psychooncology 2002;11:212–220.

Address correspondence to:
*Moshe Frenkel, MD*
*Department of Family Medicine*
*The University of Texas Medical Branch at Galveston*
*Hashoftim 1 B*
*Zichron Yaacov 30900 Israel*
*Galveston, TX*

*E-mail:* frenkelm@netvision.net.il