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ARTICLE

Integrating Complementary and Traditional Practices in Middle-Eastern Supportive Cancer Care

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Abstract

The Middle East is a promising arena in which researchers can explore the interchange between cross-cultural traditional medicine and supportive cancer care, as provided within an integrative oncology setting. Integrative oncology research and clinical practice in this part of the world have been focusing, for the most part, on the use of herbal medicine and mind-body-spiritual modalities, both of which are deeply rooted in traditional medical care. A regional, multinational, and interdisciplinary collaboration is currently being undertaken as part of the academic activities of the Middle-East Research Group in Integrative Oncology (MERGIO). This group is part of the Middle-East Cancer Consortium, a body supported by the National Cancer Institute. MERGIO currently facilitates a number of innovative educational, basic science, and clinical research projects that are investigating the effectiveness and safety of traditional herbal remedies. In order to create a structured, pragmatic "bedside-to-bench" and subsequent "back-to-bedside" approach, MERGIO has designed a patient-tailored integrative oncology model of supportive-palliative care. This approach addresses both patients' individual health belief models and the larger social-cultural-religious context, as defined by the health-related values of the patient's community.

The Middle East as a "Laboratory" for Investigating the Integration of Traditional Medicine in Supportive Cancer Care

During the past decade, the Middle East has emerged as one of the most promising arenas for the exploration of the integration of traditional medicine in supportive and palliative cancer care. The research taking place is reflective of the richly diverse social, cultural, and religious communities that range from Morocco in the west to Iran in the east; and from Turkey and the former Soviet Union southern republics in the north to Saudi Arabia in the south. For centuries, traditional medicine has been playing a central role in patient care, from the ancient medical schools of Egypt and Mesopotamia through the rise of the three monotheistic religions of Judaism, Christianity, and Islam. This has further expanded the medical knowledge of the time, providing it with a historical role as a mediator between the Western Greco-Roman and the Eastern Chinese and Ayurvedic schools of medicine. This rich traditional medicinal heritage can still be seen today in the deep affinity throughout today's Middle East toward traditional medicine, especially with respect to the use of herbal medicine.

Complementary and traditional medicine (CTM) is extremely popular among patients with cancer in Middle-Eastern countries. Rates of CTM use in this region range from 35% in Iran to 46% in Morocco, 51% in Israel, 57% in Turkey, 90% in Saudi-Arabia, and nearly 100% in Jordan (1). In many of these countries, CTM is still regarded as an alternative to conventional oncology care, or else as a complementary approach whose goal is to provide beneficial effects from both "natural" and scientific

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Table 1. Examples of Middle-Eastern clinical trials in integrative oncology

Country	CIM* modality	Study format	Impact of CIM on supportive care–related outcomes	First author, journal, year (ref.)
Cyprus	Mind-body medicine	Randomized	Muscle relaxation and guided imagery reduces anxiety and depression in patients undergoing chemotherapy (breast and prostate cancer)	Charalambous, *Evid Based Complement Alternat Med*, 2015 (12)
Egypt	Herbal/ traditional medicine	Randomized	Prophylactic use of honey reduces radiochemotherapy-induced mucositis (head/neck cancer)	Rashad, *J Laryngol Otol*, 2008 (13)
		Randomized	Honey induces faster healing in patients with grade 2/3 chemotherapy-induced mucositis (acute lymphoblastic leukemia)	Abdulrhman, *Pediatr Hematol Oncol*, 2012 (14)
Iran	Herbal/ traditional medicine	Randomized	Application of honey improves radiation-induced mucositis (head/neck cancer)	Motallebnejad, *J Contemp Dent Pract*, 2008 (15)
		Randomized	Mouthwash with the herb *Achillea millefolium* improves chemotherapy-induced oral mucositis	Miranzadeh, *Eur J Oncol Nurs*, 2015 (16)
		Randomized	Herbal compound (*Malva sylvestris* and *Alcea digitata*) improves xerostomia (head/neck cancer)	Ameri, *J Evid Based Complementary Altern Med*, 2016 (17)
		Randomized	Topical alpha ointment (containing henna) was more effective in healing of radiation-induced dermatitis than topical hydrocortisone cream (breast cancer)	Ansari, *Iran J Med Sci*, 2013 (18)
		Randomized	HESA-A herbal-marine formula improves vision and pain (breast cancer with choroidal metastasis)	Ahmadi, *Med Sci Monit*, 2005 (19)
	Manual/ movement therapies	Randomized	Reduced pain and fatigue during chemotherapy	Aghabati, *Evid Based Complement Alternat Med*, 2008 (20)
	Nutritional interventions	Randomized	Onion consumption ameliorates hyperglycemia and insulin resistance during doxorubicin-based chemotherapy (breast cancer)	Jafarpour-Sadegh, *Integr Cancer Ther*, 2016 (21)
Israel	Anthroposophic medicine	Nonrandomized	Art therapy alleviates depression and fatigue in cancer patients during chemotherapy	Bar-Sela, *Psycho-oncol*, 2007 (22)
		Randomized	Chemotherapy dose reductions, severe nonhematological side effects, and hospitalizations were less frequent in patients treated with *Viscum album* (non–small cell lung cancer)	Bar-Sela, *Eur J Cancer*, 2013 (23)
		Nonrandomized	Intraperitoneal administrations of *Viscum album* reduces the need for repeat drainage in patients with malignant ascites	Bar-Sela, *Anticancer Res*, 2006 (24)
	Herbal/ traditional medicine	Randomized	The addition of LCS101 to anthracycline- and taxane-based chemotherapy may significantly prevent chemotherapy-induced hematological toxicities (breast cancer)	Yaal-Hahoshen, *Oncologist*, 2011(25)
		Randomized	Garlic extract did not reduce febrile neutropenia risk in the entire cohort, but appeared to exert a protective effect in the lower-risk subgroup (hematological malignancies)	Gatt, *Integr Cancer Ther*, 2015 (26)
		Nonrandomized	*Triticum aestivum* (wheatgrass juice) reduces hematological toxicity (breast cancer)	Bar-Sela, *Nutr Cancer*, 2007 (27)
	Homeopathy	Randomized	Traumeel S supplement improves stomatitis (hemato-oncology)	Oberbaum, *Cancer*, 2001 (28)
	Mind-body medicine	Nonrandomized	Hypnosis improves xerostomia in patients with head and neck cancer	Schiff, *J Pain Symptom Manage*, 2009 (29)
		Randomized	Progressive muscle relaxation with guided imagery reduces distress	Baider, *Gen Hosp Psychiatry*, 2001 (30)
	Patient-tailored integrative program	Preference nonrandomized controlled study	Improved sleep, social functioning, and global health status observed in Russian-speaking patients undergoing chemotherapy	Sharabi, *Support Care Cancer*, 2016 (31)
		Preference nonrandomized controlled study	Improved cancer-related fatigue during chemotherapy (gynecologic cancer)	Ben-Arye, *Support Care Cancer*, 2015 (32)
		Preference nonrandomized controlled study	Improved appetite, drowsiness, shortness of breath, and sleep in patients reporting gastro-intestinal symptoms during chemotherapy	Ben-Arye, *Clin Nutr*, 2015 (33)

(continued)

Table 1. (continued)

Country	CIM* modality	Study format	Impact of CIM on supportive care–related outcomes	First author, journal, year (ref.)
Saudi Arabia	Herbal/ traditional medicine	Randomized	Mouth rinse containing olive leaf extract improves oral mucositis in patients receiving chemotherapy	Ahmed, *Saudi Dent J*, 2013 (34)
Turkey	Herbal/ traditional medicine	Randomized	Ginger decreases severity of nausea and the number of vomiting episodes (breast cancer)	Arslan, *Clin J Oncol Nurs*, 2015 (35)
	Nutritional interventions	Randomized	Kefir (yogurt) improves sleep disturbances in patients undergoing chemotherapy (colorectal cancer)	Can, *Oncol Nurs Forum*, 2009 (36)
	Yoga	Nonrandomized	Improved fatigue and sleep in the yoga group compared with an exercise group (breast cancer)	Ulger, *Complement Ther Clin Pract*, 2015 (37)

*CIM = complementary integrative medicine.

sources in parallel. A recently published study conducted in Israel and the Palestinian Authority showed that patients with cancer favor a model of care in which CTM is integrated as part of conventional supportive cancer care, with the goals of reducing the many side effects of oncology treatments and improving quality of life (QOL) (2,3). The findings of this research have shown that a change in attitudes is taking place, both with respect to the expectations of patients regarding the role of CTM in improving QOL, and for providing hope that CTM will improve survival or prevent recurrence or metastatic disease.

In a recently published regional survey among 339 health care providers from 16 Middle-Eastern countries, the majority of respondents favored the integration of CTM within conventional supportive cancer care, while recognizing the need for education and training in this field (4). Additional studies exploring the perspectives of patients, oncology health care providers, and CTM practitioners have suggested that these three partners, who share the "journey" of cancer care, have three common goals, the first of which is bridging the patient-oncologist communication gap through the participation of integrative physicians (IPs) in the multidisciplinary oncology health care team. IPs can provide open, nonjudgmental, evidence-based guidance in the integration of CTM in supportive cancer care in a way that resonates with patients' health belief models and their affinity toward traditional medicine. The second goal is focusing CTM treatments on the improvement of QOL-related outcomes, and the third and final goal is to minimize the risks associated with CTM use, including the potential for interactions between herbal products and oncology drugs that can compromise their effectiveness and safety (5,6,7).

The increasing interest in the integration of CTM in the conventional supportive care setting has led to a number of collaborative efforts between multinational teams of researchers, such as the Middle-East Research Group in Integrative Oncology (MERGIO). This group is part of the Middle-East Cancer Consortium (MECC), a body supported by the National Cancer Institute. MERGIO currently facilitates a number of innovative educational, research, and clinical projects that are examining the effectiveness and safety of traditional herbal remedies in cancer care. In order to create a structured, pragmatic "bedside-to-bench" and subsequent "back-to-bedside" approach, MERGIO has designed a patient-tailored integrative oncology model of supportive-palliative care.

An example of one such project is the identification of herbal medicinal products that are in common use in oncology settings throughout the Middle East. This research has led to the conclusion that of the 44 herbal products identified, at least 29 have potential safety-related issues, including negative herb-drug interactions and the directly toxic effects of these products (8). Another of the MERGIO projects is focused on the role of an integrative approach that can bridge cross-cultural gaps between refugees from the Middle East and their European oncology health care providers. This research aims to examine the extent to which an integrative medicine approach may mediate between those immigrants for whom traditional medicine is the dominant perceived health care model and the conventional care model provided by their European host countries.

The Role of Middle-Eastern Traditional Medicine in Promoting Integration

There has been a significant increase in recent years in the number of articles published in both basic and clinical scientific research in integrative oncology that have originated from Middle-Eastern countries. At least 15 of these studies have come from Egypt, Jordan, Lebanon, Morocco, the Palestinian Authority, Saudi-Arabia, and Tunisia, and an additional 50 papers have come from countries such as Israel, Turkey, and Iran (1). The research covers a wide range of subjects, reflecting the widely diverse spectrum of CTM modalities used throughout the region. The studies have focused primarily on traditional and herbal medicine, as well as nutritional interventions, mind-body practices, manual/movement therapies, anthroposophic medicine, and homeopathy. The clinical studies that have been published often serve as a continuation of preclinical in vitro research, with the aim of identifying traditional herbs with potential clinical significance in cancer care (9).

In countries such as Israel, clinical research has also addressed the impact of integrative oncology services, which are now part of seven oncology centers across the country. A multidisciplinary team of researchers and clinicians in this country has published a large body of research on the effectiveness of a patient-tailored integrative program. The program works according to a culturally sensitive design that addresses the expectations and QOL-related concerns of patients from both Arab and Jewish communities. The research on the integrative program employs a pragmatic, preference-controlled design, addressing the impact of the integrative program on specific and nonspecific QOL-related outcomes. It has also examined the impact of integrative oncology on disease- and treatment-related adverse effects, including cancer-related fatigue, gastro-intestinal concerns, anxiety, insomnia, and general well-being (Table 1) (10,11).

Conclusion

Integrative oncology research is evolving at a fast pace throughout the Middle East. The findings of this research are being translated into integrative oncology models, with a "bench-to-bedside" approach of preclinical-to-clinical research. International research collaborations in integrative oncology are facilitated by groups such as MERGIO, which works within the MECC initiative with the support of the US National Cancer Institute. The findings of these research initiatives are important in other countries and societies as well, especially when cross-cultural medicine is a key concept of care, as is the case among many minority groups and immigrant populations. These initiatives should be enhanced by initiatives such as the promotion of collaboration with the international community and with the establishment of a Research Center for Excellence in integrative oncology. They should also be empowered by bodies such as the World Health Organization, which has already recognized palliative care as a leading objective, following the 2014 World Health Assembly resolution WHA67.19 (38). The creation of a central body coordinating research efforts in CTM would significantly advance the patient-centered care that is currently taking place, creating a framework for a shared decision-making, culturally sensitive, and evidence-based approach to patient care. It would also significantly enhance the impact of CTM in conventional supportive cancer care models.

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