ROUNDS IN THE GENERAL HOSPITAL

Lessons Learned at the Interface of Medicine and Psychiatry

The Psychiatric Consultation Service at Massachusetts General Hospital (MGH) sees medical and surgical inpatients with comorbid psychiatric symptoms and conditions. Such consultations require the integration of medical and psychiatric knowledge. During their twice-weekly rounds, Dr Stern and other members of the Consultation Service discuss the diagnosis and management of conditions confronted. These discussions have given rise to rounds reports that will prove useful for clinicians practicing at the interface of medicine and psychiatry.

Ms Watkins is a research program manager for the MGH Transplant Center. Dr Fernandez-Robles is an attending physician on the Psychiatric Consultation Service and the Psychooncology Service at MGH. Dr Miller is the director of Community Health Education and Wellness Center at MGH. Dr Pine is a senior research technologist at the MGH Cancer Center. Dr Stern is chief of the Psychiatric Consultation Service at MGH and a professor of psychiatry at Harvard Medical School.

Dr Stern is an employee of the Academy of Psychosomatic Medicine, has served on the speaker's board of Reed Elsevier, is a stock shareholder in WiFiMD (Tablet PC), and has received royalties from Mosby/Elsevier and McGraw Hill. Ms Watkins and Drs Fernandez-Robles, Miller, and Pine report no financial or other affiliations relevant to the subject of this article.

Corresponding author: Theodore A. Stern, MD, Department of Psychiatry, Massachusetts General Hospital, Fruit St, WRN 605, Boston, MA 02114.

Prim Care Companion CNS Disord 2011;13(2):e1-e6 Published online: March 3, 2011 (doi:10.4088/PCC.10f01011). © Copyright 2011 Physicians Postgraduate Press, Inc.

Use of Complementary and Alternative Medicine by Patients With Cancer

Carmen L. Watkins, BA; Carlos Fernandez-Robles, MD; Kathleen M. Miller, RN, PhD; Alexander Pine, PhD; and Theodore A. Stern, MD

H ave you ever wondered how often your patients who are undergoing chemotherapy and radiation therapy develop side effects from these treatments? Have you wondered how often they suffer in silence or report these side effects to you? Have you considered how often they accept your recommendations to manage these side effects and how often they seek alternative treatments for them? If you have, then this case vignette and discussion should serve as a stimulus for your management of patients with symptoms secondary to cancer treatments.

CASE VIGNETTE

Ms A, a 47-year-old professional, moderately sedentary, East Asian woman, was recently diagnosed with breast cancer. A core biopsy revealed a grade 2 to 3 infiltrating ductal carcinoma with positive estrogen and progesterone receptors and human epidermal growth factor receptor 2 and associated ductal carcinoma in situ. She went on to have an excisional biopsy, which revealed a 2.5-cm infiltrating ductal carcinoma associated with multiple smaller nodules. She was taken for a re-excision, and multifocal cancer was found at, and beyond, the surgical site. An Oncotype DX (Genomic Health, Redwood City, California) analysis was performed. She had a recurrence score of 38 (which is in the high-risk range) giving a rate of distant recurrence of 26% at 10 years, assuming treatment with 5 years of tamoxifen. She then underwent a mastectomy that was complicated by pain and infection at the surgical site. These complications were treated with topical lidocaine and antibiotics. Ms A also underwent an axillary lymph node dissection that led to lymphedema (treated by physical therapy). Then she started chemotherapy and was scheduled for 4 cycles of doxorubicin and cyclophosphamide every 2 weeks (to be followed by 4 cycles of paclitaxel and dexamethasone).

Ms A consulted her primary care physician about numerous problems (including nausea, fatigue, neuropathy, lymphedema, and redness, as well as postoperative pain at the surgical site). In addition, she felt anxious, depressed, angry, and sad; she also noted social withdrawal, decreased function, inattentiveness, and difficulties finding words.

Ten years earlier, Ms A was misdiagnosed with breast cancer; she had an abnormal mammogram, and her biopsy results were mixed with those of another patient. Following this experience, she had heightened anxiety about mammograms, and she resented her physicians for the stress it caused her. At her primary care visit, she struggled to find a reason for her tumor and felt that she had brought the cancer into her life by worrying about it.

Ms A was determined to complete her treatment. However, she was concerned about treatment side effects—nausea, fatigue, hair loss, stomatitis, loss of appetite, and neutropenia—and she hoped to address her emotional state and social situation. She grieved the loss of her breast and feared that she had become unattractive; however, in keeping with her cultural background,

CLINICAL POINTS

- More than one-fourth of patients taking herbs and chemotherapeutic components are at risk for developing clinically relevant complementary and alternative medicine (CAM)-drug interactions.
- A patient's symptoms can be managed by integrating proven CAM therapies into mainstream practice by linking with credentialed CAM providers and/or creating an integrative center.
- Although a large percentage of cancer patients use CAM in combination with conventional therapies, nearly three-fourths of those patients do not inform their primary care physicians about their CAM use.

she was reticent to discuss her feelings. She managed her anxiety with use of lorazepam. After reading extensively about complementary and alternative medicine (CAM), she wanted to exercise more control over her care by supplementing her treatment with CAM.

Ms A decided to try the herb St John's wort (Hypericum perforatum), which is used for treatment of mild depression and anxiety, and she wanted to increase her intake of soy products. Her primary care physician counseled her on both of these options. He was aware that while St John's wort can be helpful in the treatment of mild depression, its use could interfere with one of her chemotherapy drug's (cyclophosphamide) metabolism. They also discussed the mixed results of studies on the role of soy in breast cancer treatment and the recommendations of the National Institutes of Health (NIH) National Center for Complementary and Alternative Medicine (NCCAM) that "women who have or who are at increased risk of developing breast cancer or other hormone-sensitive conditions . . . should be particularly careful about using soy. . . . "1 Together, Ms A and her primary care physician agreed that using St John's wort and increasing her soy intake would be detrimental to her health.

Ms A's primary care physician encouraged her to continue to talk with him about new CAM options that she wanted to try. In addition, he provided her with literature and discussed CAM options (including individual psychotherapy, support groups, acupuncture, yoga, tai chi, relaxation training, biofeedback, diet, and nutrition) that she could start, as well as others (eg, massage therapy) that needed to be delayed because of her current physical condition (ie, recovery from surgery) and her problems with neutropenia, lymphedema, and osteoporosis. However, she was able to join the Reach to Recovery group and the nearby Wellness Community (although she was reluctant to share in group settings). In addition, the Look Good . . . Feel Better program was recommended to her for dealing with appearance-related side effects of treatment. Her primary care physician recommended acupuncture for mitigating some of the side effects that she was experiencing from chemotherapy, such as the nausea and fatigue (with neutropenic patients, acupuncture is often contraindicated for absolute neutrophil counts < 500–1,000).

Her primary care physician also discussed the risks of other specific CAM–anticancer drug interactions that could affect drug absorption, distribution, metabolism, and excretion. At the end of the visit, Ms A felt empowered to manage her care.

WHAT IS CAM?

The NIH NCCAM defines *complementary and alternative medicine* as "a group of diverse medical and health care systems, practices, and products that are not generally considered part of conventional medicine."¹ (Conventional medicine usually implies conventional Western medicine.) More specifically, alternative medicine refers to practices that are used in place of those prescribed by practitioners of Western medicine, while complementary modalities often supplement them. Increasingly, the term *integrative medicine* is being used to define medicine that "combines mainstream (Western) medical therapies and CAM therapies for which there is some high-quality scientific evidence of safety and effectiveness."¹ The NCCAM categories divide CAM therapies into 5 groups (Table 1).^{2,3}

WHO USES CAM IN THE UNITED STATES?

In 2007, the Centers for Disease Control and Prevention's National Center for Health Statistics (NCHS) conducted the National Health Interview Survey (NHIS).² It included questions on 36 types of CAM therapies commonly used in the United States: 10 types of provider-based therapies (eg, acupuncture and chiropractic care) and 26 other therapies (eg, herbal supplements and meditation) that do not require a provider.

On the basis of this survey, in 2007, almost 4 of 10 adults had used CAM therapy in the past 12 months.

Table 1. NCCAM Categories of Complementary and Alternative Medicine Therapies: Prevalence of Individual Complementary Therapy Use by the General Public in 2002 and 2007 and by Cancer Patients in 2002^a

	General	Cancer	General
	Public	Patients	Public
	2002, %	2002, %	2007, %
Category	(n=31,044)	(n=1,904)	(n=23,393)
Alternative medical systems			
Acupuncture	1.1	1.2	1.4
Avurveda	0.1	0.1	0.1
Homeopathic treatment	1.7	1.2	1.8
Naturopathy	0.2	0.3	0.3
Traditional healers			0.4
Biologically based therapies			
Chelation therapy	0.0	0.2	0.0
Folk medicine	0.1	0.2	
Nonvitamin, nonmineral,	18.9	19.8	17.7
natural products			
Diet-based therapies	3.5	4.0	3.6
Manipulative and			
body-based therapies			
Chiropractic or	7.5	7.8	8.6
osteopathic			
manipulation			
Massage	5.0	5.5	8.3
Movement therapies			1.5
Mind-body therapies			
Biofeedback	0.1	0.2	0.2
Meditation	7.6	9.4	9.4
Guided imagery	2.1	3.1	2.2
Progressive relaxation	3.0	4.2	2.9
Deep breathing exercises	11.6	13.9	12.7
Hypnosis	0.2	0.6	0.2
Yoga	5.1	4.0	6.1
Tai chi	1.3	1.9	1.0
Qigong	0.3	0.5	0.3
Energy healing therapy/Reiki	0.5	1.0	0.5
ap 1 p (123			

^aBased on Barnes et al.^{2,5} Abbreviation: NCCAM = National Center for Complementary and Alternative Medicine.

Symbol: ... = no data.

CAM use among adults was greater among women (42.8%, as compared to 33.5% in men), those 30–69 years of age, those with advanced educational degrees (eg, master's, doctorate, or professional degrees: 55.4%), those who were not poor (poor: 28.9%, near poor: 30.9%, not poor: 43.3%), those living in the West (44.6%), and those who had quit smoking (48.1%). Unfortunately, while educational level and socioeconomic status are linked with use of CAM, it is not clear whether CAM use is driven by access and/or cost issues, as most CAM is paid as an out-of-pocket expense.²

WHAT TYPES OF CAM MODALITIES DO AMERICANS USE?

The 2007 survey showed that the most commonly used CAM therapies among adults in this country were nonvitamin, nonmineral, natural products (17.7%) (most commonly fish oil/omega 3/DHA, glucosamine, echinacea, flaxseed oil, and ginseng); deep breathing exercises (12.7%); meditation (9.4%); chiropractic care or osteopathic manipulation (8.6%); massage (8.3%); yoga (6.1%); acupuncture (1.4%); and tai chi (1%). These results are similar to those of a survey conducted 5 years earlier³ showing stable trends of this practice in America.

WHY DO AMERICANS USE CAM?

The 2007 NCCAM survey showed that adults most often used CAM to treat pain (eg, back pain or problems [17.1%], neck pain or problems [5.9%], joint pain or stiffness/other joint condition [5.2%], arthritis [3.5%]) and other musculoskeletal conditions (1.8%). However, CAM was also used to treat anxiety (2.8%), severe headaches (1.6%), insomnia (1.4%), stress (1.3%), and depression (1.2%).²

HOW IS CAM USED BY CANCER PATIENTS?

Several studies have looked at the use of CAM among cancer patients. Rates of use have increased over the years^{4–7}; it has been used by as few as 18% during the early 1990s⁴ and in up to as many as 40%–91% (when including praying for health) during the last decade.^{5–7}

The NHIS study³ of 2002 also found that 40% of patients with a cancer diagnosis used at least 1 form of CAM and 18% used multiple therapies during the year before the survey.⁸ Among individual CAM therapies surveyed by the study, biologically based therapies (eg, use of natural products and herbs) were used most often by cancer patients (19.8%). These data mirror patterns of CAM use throughout the United States: almost 19% of adults in the general public used a natural product or herb in 2002,³ and 17.7% used them in 2007.² The second most common form of CAM used was deep breathing exercise, which is classified by NCCAM as a mind-body therapy. Approximately 14% of survey respondents with a cancer diagnosis reported using this therapy within the past year. These data are consistent with the prevalence of deep breathing exercise conducted in the general population: 11.6% of surveyed adults used deep breathing therapy in 2002 and 12.7% used it in 2007. Meditation was the third most frequently cited CAM therapy by cancer patients and accounted for use in 9.4%; this is consistent with use in the general public (7.6% in 2002, 9.4% in 2007). (See Table 1 for the prevalence of other CAM therapies used by cancer patients and by members of the general public.)

WHY SHOULD PRIMARY CARE PHYSICIANS LEARN ABOUT CAM?

Physicians should learn the types, severity, and frequency of side effects that occur during and after

Table 2. Complementary and Alternative Medicine (CAM) Resources for Primary Care Physicians		
NCCAM Web site: http://www.nccam.nih.gov	This site provides descriptions of commonly practiced CAM modalities in the United States, as well as cautions, contraindications, and research updates on CAM efficacy	
MedlinePlus Web site: www.medlineplus.gov	The "Drugs and Supplements" section contain a comprehensive database of herbs and supplements, including drug-herb/supplement interactions	
Natural Standard Web site: www.naturalstandard.com	The Natural Standard Web site was founded by clinicians and researchers to provide high- quality, evidence-based information about complementary and alternative therapies	
Abbreviation: NCCAM = National Center for Compleme	entary and Alternative Medicine.	

cancer treatment, particularly about the nature of those side effects not often seen by medical staff after hospital discharge. One study showed that more than 75% of physicians and nurses underestimated the degree and frequency of delayed chemotherapy-induced nausea and emesis following the administration of chemotherapy treatments.⁹ When patients fail to obtain relief from symptoms, they may feel that their physician did not understand their experience, or their level of discomfort, and did not provide them with an effective treatment. This may stimulate a search for alternative treatments from a variety of providers, including those who practice alternative and complementary therapies.

Failure to elicit information about each patient's experience or to encourage discussion of adverse effects inhibits rapport and contributes to nonadherence.¹⁰ Therefore, collaborative and negotiated approaches facilitate care; follow-up phone calls and visits can be used to track each patient's progress at home.

Some institutions (eg, Memorial Sloan-Kettering Cancer Center) explicitly ask patients about their use of CAM the rapies¹¹ (ie, whether they are using or are considering use of them and asking about their perceptions about the potential benefits of CAM). Asking these questions at each visit may uncover essential information about unrecognized interactions between conventional drugs and CAM agents and may also provide the physicians with information about the types of problems and the level of distress a patient is experiencing, as well as the level of knowledge the patient has about CAM. This can create an opportunity to educate patients about CAM therapies (including ones that are effective, under investigation, ineffective, and harmful), and it should not be overlooked. Standardized patient handouts that contain basic information or that direct patients to Web sites (where new information becomes available) can be beneficial (Table 2).

Depending on the expertise, resources, and interest level of a physician, he or she may choose to refer an interested patient to a CAM provider for symptomatic management. Another tactic increasingly used by major hospitals (eg, Memorial Sloan-Kettering Cancer Center and Massachusetts General Hospital) is to manage a patient's symptoms by integrating proven CAM therapies into mainstream practice or by creating an integrative center.^{12,13}

WHY SHOULD PRIMARY CARE PHYSICIANS BE CONCERNED ABOUT USE OF CAM BY THEIR PATIENTS?

Although a large percentage of cancer patients use CAM in combination with conventional therapies, nearly three-fourths of them do not inform their primary care physician about their CAM use.¹⁴

HERB-DRUG INTERACTIONS

Sparreboom and associates¹⁵ warned about the increased risk of unwanted interactions (between herbal remedies and chemotherapeutic agents) in large part linked with the narrow therapeutic index of chemotherapeutic agents.

They noted that herbs (eg, garlic [*Allium sativum*], ginkgo [*Ginkgo biloba*], echinacea [*Echinacea purpurea*], ginseng [*Panax ginseng*], St John's wort [*Hypericum perforatum*], and kava [*Piper methysticum*]) have the potential to significantly alter the activity of cytochrome P450 isozymes and the drug transporter P-glycoprotein and induce pharmacokinetic interactions with anticancer drugs. Additionally, the potential induction of orphan nuclear receptors involved in the induction of metabolizing enzymes and ATP BC drug transporters by CAM suggest additional mechanism for potential interactions with chemotherapy regimens.¹⁶

Many of the above-mentioned herbal supplements are commonly used to treat comorbidity with cancer (eg, depression: St John's wort¹⁷; memory loss or "chemo-brain": ginkgo¹⁸; anti-inflammatory, antioxidant, and apoptotic activity: ginseng¹⁹; and anxiety and insomnia: kava^{20,21}).

Moreover, McCune and colleagues²² estimated that more than one-fourth of patients taking herbs and chemotherapeutic compounds were at risk for developing clinically relevant CAM-drug interactions.

ACUPUNCTURE AND CANCER TREATMENT

Among patients undergoing cancer treatments, acupuncture is frequently used to ameliorate adverse effects. Its use is estimated to range from 1.7% to 31%, and an increase in acupuncture research in the field of oncology in the past 20 years suggests a growing trend toward incorporating it into routine clinical practice.²³ Controlled trials have documented its efficacy in the treatment of nausea and vomiting,²⁴ cancer-related neuropathic pain,²⁵ depression and anxiety,²⁶ hot flashes,²⁷ and leukocytosis,²⁸ and pilot studies have suggested its usefulness in the treatment of fatigue,²⁹ chemotherapy-induced neuropathy,³⁰ and even radiation-induced xerostomia.³¹ Overall, it is a safe procedure when appropriately delivered; however, minor complications (such as bruising, pain, bleeding, and exacerbation of existing symptoms) can still occur.³²

MASSAGE AND CANCER TREATMENT

Similarly, therapeutic massage is often used by patients to relax and diminish stress during cancer treatment. Although limited by methodological quality, several studies suggest that it can help reduce pain, nausea, anxiety, depression, anger, stress, and fatigue and improve quality of life.³³ Overall, massage therapy is a safe alternative; however, it is not entirely risk free. Vigorous massage should be avoided by patients with bleeding disorders or low platelet counts and by patients receiving anticoagulation therapy. Further, massage should not be performed in any area of the body afflicted by blood clots, fractures, open or healing wounds, skin infections, or weakened bones or where there has been recent surgery. Cancer patients in particular should consult their physician before having a massage that involves deep or intense pressure.³⁴

MEDITATION, GUIDED IMAGERY, AND ELICITATION OF THE RELAXATION RESPONSE

Meditation, guided imagery, and focused breathing are all methods to elicit the relaxation response,³⁵ which has been efficacious for the treatment of side effects associated with cancer chemotherapy.^{36,37} Patients can use these CAM modalities on their own (after training); audiotapes and CDs are readily available to guide this treatment.

WHERE DO PATIENTS GO TO RECEIVE CAM SERVICES?

Most provider-based therapies (eg, acupuncture, chiropractic care, therapeutic massage, and energy healing) are delivered in the community through private practitioners or group CAM practices. Herbal supplements can be obtained at pharmacies, health food stores, and ethnic neighborhood stores and via the Internet; this makes the quality and consistency of products variable and often unreliable. Meditation, yoga, tai chi, and qigong can be accessed through a variety of community locations (including meditation centers, Councils on Aging, YMCAs, adult education programs, martial arts studios, and health care facilities). Patients can engage in modalities that elicit the relaxation response in their own homes via audiotapes and CDs.

ARE THERE OTHER RESOURCES FOR PATIENTS?

Another way a clinician can address a patient's symptoms is to promote CAM research that may lead to evidence-based treatments. Patients may be referred to www.clinicaltrials.gov to review information about how to join a CAM trial. This is an opportunity for patients who are interested in CAM and also provides a safe framework in which patients are evaluated for adverse effects during the CAM treatment by medical providers.

REFERENCES

- National Institutes of Health. National Center for Complementary and Alternative Medicine (NCCAM). What is complementary and alternative medicine? http://nccam.nih.gov/health/whatiscam/. Accessed January 3, 2011.
- Barnes PM, Bloom B, Nahin R. Centers for Disease Control. Complementary and alternative medicine use among adults and children: United States, 2007. National Health Statistics Reports. 2008;12: 1–24. http://www.nysca.com/w/newspdf/ ComplementaryAndAlternativeMedicineUseInUS2007.pdf. Accessed January 3, 2011.
- Barnes PM, Powell-Griner E, McFann K, et al. Complementary and alternative medicine use among adults: United States, 2002. *Adv Data*. 2004;(343):1–19.
- Downer SM, Cody MM, McCluskey P, et al. Pursuit and practice of complementary therapies by cancer patients receiving conventional treatment. *BMJ*. 1994;309(6947):86–89.
- Molassiotis A, Scott JA, Kearney N, et al. Complementary and alternative medicine use in breast cancer patients in Europe. Support Care Cancer. 2006;14(3):260–267.
- Yates JS, Mustian KM, Morrow GR, et al. Prevalence of complementary and alternative medicine use in cancer patients during treatment. *Support Care Cancer*. 2005;13(10):806–811.
- Sikorskii A, Wyatt GY, Siddiqi A, et al. Recruitment and early retention of women with advanced breast cancer in a complementary and alternative medicine trial. *Evid Based Complement Alternat Med.* [eCAM Advance Access published on July 20, 2009].
- 8. Mao JJ, Farrar JT, Xie SX, et al. Use of complementary and alternative medicine and prayer among a national sample of cancer survivors compared to other populations without cancer. *Complement Ther Med.* 2007;15(1):21–29.
- 9. Grunberg SM, Deuson RR, Mavros P, et al. Incidence of chemotherapy-induced nausea and emesis after modern antiemetics. *Cancer*. 2004;100(10):2261–2268.
- Denois VR, Poirson J, Nourissat A, et al. Adherence with oral chemotherapy: results from a qualitative study of the behaviour and representations of patients and oncologists. *Eur J Cancer Care (Engl)*. July 23, 2010. [Epub ahead of print].
- Deng G. Integrative cancer care in a US academic cancer centre: the Memorial Sloan-Kettering experience. *Curr Oncol.* 2008;15(suppl 2):s108, es68–es71.
- Memorial Sloan-Kettering Cancer Center. http://www.mskcc.org/mskcc/html/1979.cfm. Accessed January 5, 2011.
- Massachusetts General Hospital. http://www.massgeneral.org/cancer/hopes/wellness.aspx. Accessed January 5, 2011.
- Eisenberg DM, Kessler RC, Foster C, et al. Unconventional medicine in the United States: prevalence, costs, and patterns of use. *N Engl J Med.* 1993;328(4):246–252.
- 15. Sparreboom A, Cox MC, Acharya MR, et al. Herbal remedies in the United States: potential adverse interactions with

anticancer agents. J Clin Oncol. 2004;22(12):2489-2503.

- Meijerman I, Beijnen JH, Schellens JHM. Herb-drug interactions in oncology: focus on mechanisms of induction. *Oncologist*. 2006;11(7):742–752.
- Hypericum Depression Trial Study Group. Effect of Hypericum perforatum (St John's wort) in major depressive disorder: a randomized controlled trial. JAMA. 2002;287(14):1807–1814.
- Solomon PR, Adams F, Silver A, et al. Ginkgo for memory enhancement: a randomized controlled trial. JAMA. 2002;288(7):835–840.
- Helms S. Cancer prevention and therapeutics: Panax ginseng. Altern Med Rev. 2004;9(3):259–274.
- 20. Sarris J, Kavanagh DJ, Byrne G, et al. The Kava Anxiety Depression Spectrum Study (KADSS): a randomized, placebo-controlled crossover trial using an aqueous extract of Piper methysticum. *Psychopharmacology (Berl)*. 2009;205(3):399–407.
- Sarris J, Kavanagh DJ. Kava and St John's wort: current evidence for use in mood and anxiety disorders. J Altern Complement Med. 2009;15(8):827–836.
- McCune JS, Hatfield AJ, Blackburn AA, et al. Potential of chemotherapy-herb interactions in adult cancer patients. *Support Care Cancer*. 2004;12(6):454–462.
- Lu W, Dean-Clower E, Doherty-Gilman A, et al. The value of acupuncture in cancer care. *Hematol Oncol Clin North Am.* 2008;22(4):631–648, viii [viii].
- Shen J, Wenger N, Glaspy J, et al. Electroacupuncture for control of myeloablative chemotherapy-induced emesis: a randomized controlled trial. *JAMA*. 2000;284(21):2755–2761.
- Alimi D, Rubino C, Pichard-Léandri E, et al. Analgesic effect of auricular acupuncture for cancer pain: a randomized, blinded, controlled trial. J Clin Oncol. 2003;21(22):4120–4126.
- 26. Mehling WE, Jacobs B, Acree M, et al. Symptom management with massage and acupuncture in

postoperative cancer patients: a randomized controlled trial. J Pain Symptom Manage. 2007;33(3):258–266.

- Deng G, Vickers A, Yeung S, et al. Randomized, controlled trial of acupuncture for the treatment of hot flashes in breast cancer patients. *J Clin Oncol.* 2007;25(35):5584–5590.
- Lu W, Hu D, Dean-Clower E, et al. Acupuncture for chemotherapyinduced leukopenia: exploratory meta-analysis of randomized controlled trials. J Soc Integr Oncol. 2007;5(1):1–10.
- Vickers AJ, Straus DJ, Fearon B, et al. Acupuncture for postchemotherapy fatigue: a phase II study. *J Clin Oncol.* 2004;22(9):1731–1735.
- Wong R, Sagar S. Acupuncture treatment for chemotherapy-induced peripheral neuropathy: a case series. Acupunct Med. 2006;24(2):87–91.
- Blom M, Dawidson I, Fernberg JO, et al. Acupuncture treatment of patients with radiation-induced xerostomia. *Eur J Cancer B Oral Oncol.* 1996;32B(3):182–190.
- MacPherson H, Thomas K, Walters S, et al. The York acupuncture safety study: prospective survey of 34,000 treatments by traditional acupuncturists. *BMJ*. 2001;323(7311):486–487.
- Ernst E. Massage therapy for cancer palliation and supportive care: a systematic review of randomised clinical trials. Support Care Cancer. 2009;17(4):333–337.
- Ernst E. The safety of massage therapy. Rheumatology (Oxford). 2003;42(9):1101–1106.
- 35. Benson H, Beary JF, Carol MP. The relaxation response. *Psychiatry*. 1974;37(1):37–46.
- Burish TG, Lyles JN. Effectiveness of relaxation training in reducing nausea and vomiting induced by cancer chemotherapy. J Behav Med. 1981;4:65–78.
- Vasterling J, Jenkins RA, Tope DM, et al. Cognitive distraction and relaxation training for the control of side effects due to cancer chemotherapy. J Behav Med. 1993;16(1):65–80.