



Herbs for hematology

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COMMENTARY

Herbs for hematology

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In this issue of *Leukemia and Lymphoma*, Ben-Arye and colleagues provide a comprehensive and well-balanced review on the use of herbs in patients with cancer. In addition to reviewing the concepts of emerging integrative oncologic therapies, the authors provide guidelines that permit counseling of patients on the potential risks and benefits of this therapy. The review takes a non-judgmental approach to physician–patient communication. They review the most common herbal preparations and also provide specific questions to contemplate with patients and questions for the cancer care specialist to consider [1].

The issue of integrative oncologic therapies, also known as complementary and alternative therapies for cancer, is not a small one. Estimates currently suggest there are over \$34 billion per year spent on complementary and alternative medicines in the United States. Surveys on the prevalence of use of complementary therapies are wide-ranging and depend on the specific tumor system as well as the purpose for the use of the product. In breast cancer [2], the most common use of a herbal medication is to reduce the impact of flushing in women who are receiving anti-estrogenic therapy. Both black cohosh and phytoestrogen appear to be safe for women with breast cancer, but their efficacy is unclear.

In radiation oncology, complementary and alternative medicine use was reported in 95% of patients [3]. Excluding spiritual healing, exercise, and music, the most frequently used biologically based therapies were multivitamins (48.1%), calcium (37.3%), and vitamins with minerals (29.5%). Specific dietary supplements including fish oil (19%), flax seed (15%), glucosamine (15%), and green tea (15%) were used. Just as relevant, 47% of patients did not disclose this use to their providers, making it difficult to recognize any potential for adverse effects [4]. The prevalence of complementary and alternative medi-

cine use in pediatrics ranges from 6 to 91%, in many instances administered as part of supportive care and in an attempt to reduce therapy-related toxicity, but also to specifically cure or fight the child's cancer [5]. Up to 75% of patients with colorectal cancer report using at least one complementary alternative medicine technique [6]. In the United Kingdom, prevalence estimates range as high as 24.9% in all cancers.

The use of herbal treatments to try and reduce the neurotoxicity of proteasome inhibitors, taxanes, and platinum-based compounds is ongoing [7]. Acupuncture [8] and vitamin supplements have been administered to treat symptomatic neuropathic pain, but have not been proved effective [9].

The costs associated with these therapies are not minimal. In a review of monthly out-of-pocket costs for cancer patients, the cost of complementary and alternative medicines and vitamins was \$54, higher than that for prescription drugs at \$45. Moreover, the range of costs for prescription drugs ranged up to \$1400, but for complementary therapies ranged up to \$5000 per month, with vitamins at \$400 per month. The high out-of-pocket costs associated with alternative therapies that have not been validated are significant [10]. A survey of complementary and alternative medicines sold on the internet revealed 16 different products whose monthly cost ranged from \$4.33 to \$263 with a median cost of \$27 per month, recognizing that many patients self-administer multiple agents. The cost of these medicines is an important dimension of patient education [11]. One study suggests that self-administered stress management for cancer patients undergoing chemotherapy may be a cost-effective method to reduce stress, but the majority of therapies still remain to be evaluated [12].

One of the difficulties in evaluating complementary therapies is that many of the studies are small

and are statistically underpowered to detect clinically important differences in treatment groups [13]. Many studies of complementary medicines often have insufficient accrual to power conclusions with a high level of confidence.

In the United States, green tea with its active ingredient, epigallocatechin gallate (EGCG), has become particularly popular and is now readily available in soft drink vending machines across the country. Extensive *in vitro* data on the use of this chemical have established its anti-tumor properties. Clinical trials of therapy or chemoprevention are ongoing but have short follow-up. EGCG has shown activity in human colorectal cancer, prostate cancer, chronic lymphatic leukemia, lung cancer, and breast cancer. What is unknown is the potential long-term toxicity associated with this agent. EGCG has been shown to block the effect of bortezomib *in vitro* [14], and at the same time has also been reported to induce apoptosis and cell death when combined with bortezomib [15]. A recently published phase I trial using EGCG with polyphenon E in chronic lymphocytic leukemia (CLL) demonstrated excellent tolerance by patients as well as declines in the absolute lymphocyte count [16].

The ultimate role of complementary and alternative medicines in the management of patients with cancer has not yet been written. At this time, keeping an open mind, partnering with our patients in a non-judgmental fashion, and supporting their autonomy to explore some of these untested but generally non-toxic regimens will become an increasing component of a hematologic oncologist's practice.

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