

**Integrative Physician's Perspective**

In this issue's Tumor Board, we explore how integrative practitioners might approach a case of a less-common cancer for which no established lifestyle risk factors are known. Cholangiocarcinoma is such a cancer, and, as the excellent contribution by Drs Espat and Sharif makes clear, the major risk factors for this disease are either parasitic organisms or, perhaps more likely in US populations, inflammatory diseases such as primary sclerosing cholangitis (PSC), ulcerative colitis, and Crohn's disease. The connection to inflammation is certainly interesting, in that many cancers now appear to be related to chronic inflammation. The inflammation underlying PSC may be related to autoimmune disease based on genetic susceptibility.<sup>1</sup> Supplemental omega-3 fatty acids and restriction of omega-6 fatty acid intake may have a role to play in autoimmune conditions such as ulcerative colitis and Crohn's disease<sup>2</sup> and thus may be of relevance in the prevention of PSC.

Espat and Sharif point out that poor performance status is one of the conditions that can preclude successful surgery, which is the only intervention that offers an opportunity for long-term survival in cholangiocarcinoma. Although the performance status of the patient at the time he initially presented for surgery is not detailed in this case, and pruritis and icteric sclera were the only symptoms noted, a physical assessment for performance status should always be done at initial intake. Many cholangiocarcinoma patients present in a quite vulnerable condition. However, a course of physical care including exercise under the guidance of a physical therapist and counseling on diet may improve performance status and make possible a successful surgical intervention. We have observed improvements in the physical state of many patients in our clinic who have participated in integrative therapies. A cancer rehabilitation model involving individual exercise, sports, psychoeducation, and counseling, for instance, was shown to improve bicycle ergometry scores, muscle force, and quality of life in cancer patients.<sup>3</sup> Such a model certainly has relevance for integrative care. Whether such programs would consistently improve standard measurements of performance status would be an interesting research question.

In their discussion of nutrition, Glew and Sullivan provide the standard dietetic estimates of calories, protein, and fluid, noting that protein intake should be higher than normal during treatment because of needs for cell repair and tissue rebuilding. These authors use the American Cancer Society (ACS) and American Institute for Cancer Research (AICR) dietary cancer prevention guidelines as their model for healthful eating. However, rather than restricting these guidelines to prevention, they apply them to the situation of the

patient undergoing chemotherapy. This position, while typical for integrative nutritionists, is at variance from the standard dietary advice of these large cancer organizations for cancer patients going through conventional treatments. Most such advice serves as a general guide for healthy eating during cancer, including cancer treatment. Integrative nutritional advice of this type is in contrast to what is available in conventional sources. For instance, the National Cancer Institute Web site lists as food to increase protein intake a variety of dairy products including hard and soft cheeses, ice cream, and yogurt, along with eggs and meat,<sup>4</sup> with no discussion of fat or protein types or quantities in these foods or their potential impact on tumor growth. Nuts, peanut butter, seeds (I would classify these as fats rather than proteins), and beans and legumes appear toward the bottom of the list. The list of foods to increase caloric intake is even more alarming, featuring butter, margarine, high-fat dairy products, salad dressings, and mayonnaise, with no discussion whatever of fat types. These guidelines are also those that are applied to weight-losing cancer patients. Given the inflammatory nature of cancer cachexia,<sup>5</sup> this is definitely concerning. As Glew and Sullivan point out, specific fats and proteins in many of these foods tend to promote cancer growth (such as casein, routinely used in lab diets to induce cancers in rodents). The ACS and AICR prevention guidelines recognize the dangers of such fats and protein sources in the formation of cancer and advise substituting foods with healthful fat profiles. Integrative nutritionists, as shown in this issue's contribution, are able to provide numerous options for increasing protein intake within the framework of the prevention diet as well as for using healthful fats.

It is shocking to me that conventional dietary advice during cancer treatment makes such a turnaround from the advice for preventing cancer. Cancer does not change its physiology at the time of diagnosis, which can range from detection of very early cancer to a diagnosis of advanced malignancy. The basic processes that promote cancer growth and metastasis remain the same, and in many cases, they continue to be diet related. Nevertheless, at whatever stage cancers are diagnosed, much conventional nutritional advice changes from eating a prevention diet to eating a diet totally opposed to the preventive diet. This is especially true during treatment, which may last only a few months but can also be prolonged, especially in cases of advanced disease. I have seen the conventional advice to eat high-saturated-fat, high-sugar diets backfire in the clinical setting, where patients find their appetite so sabotaged by rich food that they become unable to maintain adequate intake of critical nutrients. It is reassuring to note that the National Cancer Institute's Web site suggests

returning to something more like a prevention diet following treatment, but new models for healthful ways to increase calories and protein during treatment are definitely needed, based on the insights of integrative nutrition.

The discussion of Dr Tina Kaczor is, typically for our contributing naturopaths, rooted in an assessment of potentially carcinogenic factors for the cancer in question. In the case of cholangiocarcinoma, Kaczor moves from the old concept of inflammation as “dolor, rubor, calor” and a discussion of eclectic medicine directly to modern concepts of cholangiocarcinoma related to cyclooxygenase-2 and vascular endothelial growth factor expression. Kaczor mentions the use of rofecoxib in this case: the case is based on a patient who presented initially in 2004, just before rofecoxib was removed from the market, and the change of drugs to celecoxib is obvious.

Working with the patient in conventional treatment, rather than discouraging his or her conventional treatment, is a theme in this contribution and represents one of the common approaches of contemporary naturopathic medicine that makes it very adaptable to the integrative medicine setting. Before Kaczor’s discussion of potential supplements, she wisely considers the issue of supplement-drug interactions and the possible impact of botanicals on CYP<sub>450</sub> enzymes. Her strategy of calculating the point at which botanicals could be taken safely without causing interaction is implemented by determining, from a drug’s half-life, when it would be 99% removed from the blood. This is quite conservative, as she mentions, but is nevertheless an interesting and reasonable approach to allow her to work with oncologists. Interestingly, though, when she has discussed self-prescribed supplement use with patients who are in clinical trial protocols, they seem to have no concerns whatever about this issue and freely take supplements to improve their quality of life no matter what is in the protocol! Kaczor estimates that more patients than commonly suspected are taking natural agents while they are on clinical trial protocols, especially since this is a population that is clearly open to innovation. Coming from a naturopath, with whom

patients are more likely to be comfortable in discussing supplements than an oncologist, this is a significant piece of data, and it should certainly be taken into consideration by clinical trial researchers.

Kaczor concludes her discussion with the observation that active participation in complementary and alternative medicine therapies may itself improve the quality of life of cancer patients by reducing their sense of being passive, vulnerable, and even dehumanized recipients of treatment. Integrative practitioners everywhere recognize the importance of promoting a stance of empowerment in their patients through active participation in getting well. This is a good reminder to us all that, in addition to the potential physiological and scientifically relevant impact of integrative care, we need to keep a sense of the patient as a whole person uppermost in our minds throughout the process of treatment and recovery.

## References

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