Pergamon

European Journal of Cancer Vol. 33, No. 4, pp. 517–518, 1997

Printed in Great Britain
0959-8049/97 $17.00 + 0.00

PII: S0959-8049(97)00009-9

Editorial

Thymus Therapy for Cancer

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INTRODUCTION

IN THIS era of claims and promises and confusion about alternative and complementary therapies, many oncologists are hardpressed to evaluate regimens of interest to their patients. The article on thymus therapy by Professor Edzard Ernst in this issue (pages 531–535) is a prototype of the careful, objective, thorough critique that clinicians require.

Indeed, patients as well as physicians will benefit from criteria-based, systematic reviews, following Professor Ernst's example. They are the required antidote to the lack of data and to the unverified claims made for unconventional methods. Most popular books on alternative or complementary therapies tout the merits of various approaches without substantiation, as though an alternative or unconventional label itself implies benefit and confers sanction.

One typical volume popular in North America discusses 43 different alternative therapies. Each one of these therapies is said to treat, if not cure, a variety of ailments. Cancer is frequently among them. I finish reading such books wondering how any illness can possibly exist in this world if such a large number of unconventional therapies can each cure so many diseases.

CELLULAR THERAPY

Thymus therapy is one type of cellular therapy, also called live cell, fresh cell and cell therapy, in which fresh embryonic animal cells, usually from fetal lambs or cows, are injected into the human body. This treatment has been given for three main reasons: to rejuvenate or restore youthful appearance and function of skin, libido and body organs; to treat illness, especially but not limited to Alzheimer's disease, epilepsy and Down's syndrome; and, in probably the least common application, to enhance immune protection against toxicity produced by chemotherapy.

To meet the first two goals, cells from the animal's organ that correspond to the diseased or imperfect area of the patient are injected. Advocates claim that these cells migrate to the organ in need, and heal or regenerate it. Cellular therapy was created in 1931 by Swiss surgeon, Paul Niehans, who then developed a clinic/spa to which celebrities and others flocked for rejuvenation. The spa continued to draw clients over the decades. Clients have been mainly wealthy people, as costs start at U.S.$10 000.

Dr Christiaan Bernard, the pioneer South African heart transplant surgeon, received cell treatment for his arthritis and served as director of research for the clinic. Despite that illustrious leadership and the treatment of thousands of patients over the years, scientific evidence in support of cell therapy's restorative or curative ability has yet to emerge. Negative results from a study of Down's syndrome children were published [2], but positive data, which could have been produced by now if the therapy works, have not been reported. More than 60 years is time enough to produce solid data if such data exist.

THYMUS CELL THERAPY IN CANCER MEDICINE

Thymic factors influence the growth of T-cells and have been postulated by proponents to enhance immunity and protect the body during chemotherapy. Although offered not as primary treatment but rather to enhance immune function, thymus therapy for cancer patients represents a third application of this therapeutic approach. Cellular therapy for cancer appears to be used on an adjunctive basis. Twelve of the 13 studies discussed by Professor Ernst used thymus therapy along with or following chemotherapy (one study provided no treatment information). Thymus therapy in these studies was not given as free-standing regimen, independent of mainstream cancer treatment. In effect, it was offered as a complementary therapy, although it differs from most complementary therapies on a few major counts: it is invasive, potentially toxic, and, as Professor Ernst's article shows, rarely beneficial.

ALTERNATIVE VERSUS COMPLEMENTARY MEDICINE

In my view, there is an essential distinction to be made between alternative and complementary therapies. Alternative therapies are offered *instead of* mainstream treatments such as surgery, radiation and chemotherapy. They can be dangerous clinically and also because they may delay patients' receipt of needed mainstream care. In North America, relatively few patients refuse standard cancer care

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Received 22 Nov. 1996; accepted 4 Dec. 1996.

and receive only alternative methods. More typically, patients try mainstream as well as unconventional treatment, sequentially or simultaneously [3].

Complementary therapies are used much more commonly [4, 5]. Complementary or adjunctive therapies, as the terms imply, are adopted by patients typically to supplement mainstream medicine or to provide palliation. Typically, they are non-invasive, safe and perceived as beneficial by patients. Most people use complementary therapies for symptom control, for relief of self-limiting or minor problems, to enhance emotional and physical well-being, or as part of a wellness-oriented lifestyle. Examples of complementary therapies include herbal teas for indigestion and relaxation, acupuncture for pain control, massage remedies which induce relaxation and reduce anxiety, meditation, yoga and other relaxation therapies, music therapy, ginger for nausea and so on. Unfortunately, the phrase alternative medicine often is used to describe complementary as well as alternative techniques, blurring the important distinctions between them.

Thymus therapy, although given in conjunction with rather than as an alternative to mainstream cancer treatment, is by definition a complementary therapy. However, it differs from most complementary therapies because it is invasive and because it can cause negative side-effects, such as infections and allergic reactions to injected material. Nine of the 13 studies in Professor Ernst's article used injectable thymus cells; one used oral preparations and three did not specify route of administration. (In 1985, the United States Food and Drug Administration banned the importation of all cell products intended for injection.)

Thymus therapy consists of non-human animal cells, which are no doubt rejected by the body. It is, therefore, unlikely that thymus therapy or any type of animal cell treatment can accomplish its goals. Thymus therapy in cancer medicine, as Professor Ernst indicates, remains unsubstantiated. Therefore, it cannot be recommended.

CELL THERAPY'S SOCIOMEDICAL CONTEXT

Cell therapy is not among today's more popular alternative or complementary therapies. Diets and dietary supplements—up to 61% of British cancer patients use unconventional diets [6]—mind–body techniques and manual therapies are probably used more often than other unproven techniques in cancer medicine. Complementary and alternative therapies, as classified by the U.S. Office of Complementary and Alternative Medicine, include: diet and nutrition, mind–body techniques, bioelectromagnetic therapy, traditional and folk remedies, pharmacological and biological treatments, manual healing methods and herbal remedies. It is clear that a broad range of approaches are available, and that they are heavily utilised.

Complementary and alternative medicine in oncology is extremely popular with the international public, especially in developed countries [2, 7–10]. Although some cancer patients use alternative therapies, many more seek massage, yoga, acupuncture, herbal teas and other adjunctive techniques for complementary use. Patients who use alternatives are more likely to be women, better educated, affluent and younger across studies worldwide. Physicians' views also have moved toward greater acceptance of unconventional therapies. More than half of physicians in one U.S. survey referred their patients to practitioners of alternative or complementary medicine. Most were primary care doctors [11].

THE CHALLENGE OF CANCER MEDICINE

Many members of the general public, including cancer patients, are frustrated about the lack of new cures for the major cancers, and about oncology's inability to treat many cancers and therapeutic toxicities effectively. People are increasingly interested in natural products and more gentle substitutes. At least in the United States, patients are dissatisfied with what they perceive to be the impersonality of cancer care. They want increasing use of soothing, nontoxic, complementary techniques to control pain and other symptoms and to reduce the stress that accompanies cancer and its treatment [12].

Hopefully, clinical oncology will more fully incorporate useful complementary therapies, and develop a better balance between the science and technology of cancer medicine and the comfort that the best of complementary medicine can bring. Additional research, including the kind of analytical reviews conducted by Professor Ernst, will enable patients and physicians to make informed choices and distinguish among the detrimental, the fanciful and the truly beneficial.

1. Ernst E. Thymus-therapy for cancer? A criteria-based, systematic view. *Eur J Cancer* 1997, **33**, 531–535.
2. Van Dyke DC, Lang DJ, van Duyne S, Heide F, Chang HJ. Cell therapy in children with Down's syndrome: a retrospective study. *Pediatrics* 1990, **85**, 9–84.
3. Cassileth BR, Lusk EJ, Strouse TB, Bodenheimer BJ. Contemporary unorthodox treatments in cancer medicine: a study of patients, treatments and practitioners. *Ann Intern Med* 1984, **101**, 105–112.
4. Cassileth BR, Chapman CC. Alternative and complementary cancer therapies. *Cancer* 1996, 77, 1026–1034.
5. Cassileth BR. Alternative and complementary cancer treatments. *The Oncologist* 1996, **1**, 172–179.
6. Downer SM, Cody MM, McCluskey P, *et al.* Pursuit and practice of complementary therapies by cancer patients receiving conventional treatment. *Br Med J* 1994, **309**, 86–89.
7. Lerner IJ, Kennedy BJ. The prevalence of questionable methods of cancer treatment in the United States. *CA* 1992, **42**, 181–191.
8. Pawlicki M, Rachtan J, Rolski J, Sliz E. Results of delayed treatment patients with malignant tumors of the lymphatic system. *Pol Tyg Lek* 1991, **46**, 922–923.
9. Sawyer MF, Gannoni AF, Toogood IR, Antoniou G, Rice M. The use of alternative therapies by children with cancer. *Med J Austr* 1994, **160**, 320–322.
10. Van der Zouwe N, van Dam FS, Aaronson NK, Hanewald GJ. Alternative treatments in cancer; extent and background of utilization. *Ned Tijdschr Geness Kd* 1994, **138**, 300–306.
11. Bokran J, Neher JO, Anson O, Smoker B. Referrals for alternative therapies. *J Family Prac* 1994, **39**, 545–550.
12. Cassileth BR. Complementary therapy. *Science Med* 1996, **1**, 18–19.