

Cancer quackery examined

Ray Lowenthal's paper at the World Convention examines 'alternative and complementary' treatments for cancer, finding they leave a great deal to be desired.



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Despite a certain amount of progress, cancer remains a difficult group of diseases to treat, and even today less than half the patients with the diagnosis can expect to be cured completely. Thus it is understandable that patients seek alternatives to orthodox treatment recommendations, particularly if they are promised cures that are claimed to be without side-effects. Unfortunately cancer patients and their families are vulnerable to exploitation. The 20th century history of cancer treatment is littered with cancer scams and with treatments that were proposed in good faith but were without foundation.

The terminology can be confusing but the two descriptions most widely used for unorthodox treatments are 'complementary' and 'alternative'. Complementary treatment is defined as that used *along with* conventional medicine whereas alternative treatment is used *instead of* conventional medicine. An all-embracing term is 'complementary and alternative medicine' (CAM).

CAM is widely used by patients in the Western world. For example a

recent survey showed that 70% of the population of Germany, 50% of Australians, 50% of Americans and 20% of UK citizens used it. A recent study of Canadian breast cancer patients showed that 67% were using CAM. The most popular methods were vitamins and minerals, herbal medicines, green tea, special food and diets, and Essiac (a herbal mixture including Slippery Elm).

Boosting immunity?

Many patients take unorthodox treatments with the aim of 'boosting the immune system'. The notion that one should do so derives from the hypothesis that cells of the immune system constantly are on the lookout for the naissance of rogue cancer cells so as to eliminate them – the theory of immune surveillance against cancer. The idea was proposed over 30 years ago by the Australian Nobel Prize winner, Sir MacFarlane Burnett; however it has not been substantiated. In fact, 90% of cancers arise in patients with a normal immune system, and there is no evidence of a defective immune system in the great majority of can-

cer patients. (There are exceptions: patients with HIV/AIDS, who are seriously immune-depressed, have a higher incidence of a few cancer types.)

Furthermore, there is as yet no evidence that 'boosting the immune system' is of value in the treatment of cancer. At any rate, it is difficult to boost the immune system, it is difficult to measure whether one has done so, and if indeed it did work it might even be harmful. Consider that lymphomas and some leukaemias are cancers derived from cells of the immune system. In such cases boosting the immune system, if it were possible, might well boost the growth of the cancerous cells too.

Do complementary and alternative treatments for cancer work? A small number have indeed been shown to do so and a few have been shown not to; but for most we just don't know. In this paper I will present evidence of some that have been tested and shown to work, some that have been tested and shown not to work, and examples of treatments that are proposed for cancer treatment but for which there is no evidence one way or the other (the majority). Why do patients choose to use CAM? The motivations may be positive or negative, as listed in Table 1.

Modern medicine puts great emphasis on being 'evidence-based', by which is meant that the treatments it uses should be based on scientific evidence. It is accepted that certain methods of obtaining evidence have greater validity than others and four levels are currently accepted (Table 2).

Table 2: Levels of evidence	
• Level I:	Meta-analysis of more than 1 randomised, controlled clinical trial
• Level II:	At least 1 randomised, controlled clinical trial
• Level III:	Evidence from non-randomised trials (eg cohort studies, historical controls)
• Level IV:	Expert opinion or consensus

However, persons not trained in scientific method may put inappropriate value on non-scientific methods of obtaining evidence, such as anecdotes, the pronouncements of authority figures, reliance on 'the wisdom of the ancients' and media reports.

Anecdotal and unsubstantiated reports abound. For example, two unverified and unverifiable statements, as seen on a web site ¹ (accessed on 3/11/00) are shown below:

Yes, it is true, the specially developed Ganoderma Spores that I sent to Wes Labs produced a 10,000% increase in natural killer cells. The procedure was recorded on video tape and certified.

Recently a breast cancer patient was given just 2 days to live after taking conventional treatments. Bioscan immediately started their unique efficacious procedure, and in less than 2 weeks the patient was well enough to leave the hospital.

Apart from the statements not being subject to checking they illustrate another common tactic used by proponents of unproven treatments, namely setting up a straw man. In the example, it is claimed that the patient was given 'two days to live' yet lived for two weeks, thus implying that the unorthodox treatment was responsible for the apparent extension of the patient's life. However, all this proves is that the person who made the inaccurate prediction got it wrong. Studies show that doctors are not good at predicting the life expectancy of patients with cancer. More usually they are over-optimistic than unduly pessimistic. Patients who do not live as long as was predicted are not in a position to point out the error. On the other hand, those who outlive the expectations may attribute their survival to whatever they did or took in the meantime and take delight in publicising these beliefs. However, that A is followed by B does not establish A as the cause of B; that would be giving the cock credit for the sun's daily rising.

Table 1 Reasons for trying CAM	
Positive motivations for trying CAM	Negative motivations for trying CAM
<ul style="list-style-type: none"> • Dissatisfaction with conventional care • Perceived ineffectiveness • Serious adverse effects • Poor doctor-patient relationship • Insufficient time • Waiting lists • 'High tech, low touch' 	<ul style="list-style-type: none"> • Rejection of science and technology • Rejection of 'the establishment' • Desperation • Difficulties with research • Distress

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Natural does not equal harmless

An accusation commonly levelled at medical practitioners is that they pay no attention to so-called natural remedies such as herbs or plants, but this is quite false. Many modern pharmaceuticals are derived from plants. Examples include aspirin from willow bark, morphine from the opium poppy, vincristine from the periwinkle, etoposide from the Mandrake plant and Taxol from the Pacific yew tree. The last three are forms of anticancer chemotherapy. Other examples of 'natural' substances used in cancer treatment by the medical profession include all-trans retinoic acid, a vitamin A derivative used to treat a type of leukaemia; G-CSF (granulocyte colony-stimulating factor), a hormone which stimulates regrowth of white blood cells following chemotherapy; and interferon, one of the body's natural antiviral agents, which can delay relapse in patients with multiple myeloma and other cancers.

Because alternative treatments are mostly 'natural', the claim is commonly made that they are harmless. But is 'natural' the same as 'harmless'? Certainly not. There are any number of harmful natural substances including garden plants, strychnine, arsenic, snake venom, tobacco and alcohol. Indeed, tobacco and alcohol are vegetarian!

Use of CAM may have dangers. Quite apart from its direct toxicity and side-effects, it is commonly expensive. The biggest danger is that patients may be persuaded to forego effective treatments. Although CAM is often adopted in order to improve quality of life, some studies show that life quality may in fact be adversely affected. This is because for some types of CAM, patients are required to involve themselves in many hours of preparation and meditation, and may take huge numbers of medications. Amongst other things, getting so involved in CAM can take patients away from friends and family. Unorthodox medicines may be mislabelled; a number of recent cases show that this can lead to severe

toxicity, for example in the substitution of inappropriate herbs in Chinese slimming tablets sold in Belgium, where many patients sustained renal failure and cancer of the urinary tract as a consequence.

The American Cancer Society has recently put out a comprehensive guide to complementary and alternative methods of cancer treatments. I

recommend it. The book divides such methods into five groups (table 3). Another excellent source of information is www.quackwatch.com

Mind body and spirit methods (3a)

While most of these would be judged to be harmless, meditation carried out in the manner that was often proposed in the 1980s involves

Table 3

Examples of methods described in The American Cancer Society's Guide to Complementary and Alternative Medicine

(a) Mind, body & spirit methods		(d) Herbs, vitamins and minerals	
Aromatherapy	Crystals	Aloe vera	Germanium
Meditation	Qijong	Beta-carotene	Ginseng
Faith healing	Feng shui	Indian snakeroot	Calcium
Humour therapy		Black cohosh	Mistletoe
	(b) Manual healing and physical touch methods	Cat's claw	PC-SPES
Acupuncture	Colon therapy	Chinese herbs	Pokeweed
Psychic surgery	Reiki	Comfrey	St John's wort
Therapeutic touch	Heat therapy	Echinacea	Vitamin C
Electromagnetic therapy		Evening primrose	Vitamin E
	(c) Pharmacological and biological methods	(e) Diet and nutrition methods	
Anti-neoplastons	DiBella therapy	Acidophilus	Noni juice
Shark cartilage	Laetrile	Coffee enemas	Mushrooms
Chelation therapy	Cancell	Fasting	Soybeans
		Garlic	Vegetarian diets
		Gerson therapy	Wheatgrass
		Grape diet	Willard water
		Macrobiotic diets	

many hours of patients' time and may be accompanied by the accusation that if the patient fails to improve, or deteriorates, it is because they have not meditated with sufficient intensity or in the correct manner. This 'blame the victim' attitude is not helpful for patients already afflicted by the diagnosis of life threatening illness.

Manual healing and
physical touch methods (3b)

Most of these will be judged as harmless, provided they are used in a complementary and not an alternative fashion. However 'colon therapy' which involves use of frequent enemas or bowel washouts, can lead to bowel perforation, electrolyte disturbance and dehydration. It is based on the completely unsubstantiated notion that cancer is a 'dirty' disease and is caused by the release of toxins from faeces in the colon.

Pharmacological and
biological methods (3c)

Many famous cancer scams belong in this category. For example, in the 1970s in the Bahamas, a clinic was set up to produce so-called 'antineoplastons', which were made from patients' blood and urine. However some samples tested by the US Food and Drug Administration were found to be contaminated by HIV/AIDS and hepatitis viruses.

Dr DiBella was an 85 year old Italian physiologist whose claim to be able to cure cancer with a mixture of pharmacologically active agents (including somatostatin, vitamins and melatonin) caused an uproar in Italy in 1998. In a court hearing, a judge ruled that the state should provide this treatment to a two-year old boy with a brain tumour, at the request of the parents. When Italian oncologists pointed out that the treatment was unproven there followed a huge political fight. Ultimately, cancer patients came forward in large numbers to be subjected to scientific tests. As reported in the *British Medical Journal* 386 patients were studied and only three (<1%)

showed a partial response to DiBella's concoction. Fifty percent developed side-effects. The report concluded that 'this regimen does not have sufficient activity in advanced

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cancer to warrant further clinical testing'.

Laetrile was scam of the 1970s. This extract of apricot pips contains cyanide, and was claimed to have an anticancer effect because allegedly cancer cells could not detoxify the cyanide whereas normal cells could. Sadly such claims are fanciful. However, at the time there were such great beliefs in the value of the treatment that the US National Cancer Institute was forced to spend millions of dollars studying it. Over 70,000 patients were said to have used it. The NCI wrote to 350,000 doctors in America to publicise their study and invited patients who claimed to have benefited to come forward. Only 92 did so, and when their cases were analysed it was concluded that at most six had shown some benefit. These figures hardly justify the continuing study of Laetrile, particularly when in a further study no benefit was found but some patients developed cyanide poisoning! Nonetheless, Laetrile clinics continue to operate in Mexico just south of the US border.

Australia and New Zealand have had their own famous cases, the most notorious of which was that of Milan Brych. He was a refugee from the

1968 anti-Soviet uprising in Czechoslovakia and found his way initially to New Zealand and then to Australia. He stated he had been a doctor in his former country and said that his name had been removed from University records because he was an anti-communist. He claimed to be a cancer specialist and started treating patients with a brew which he made in his kitchen. Claims that some patients improved led to a media frenzy and the fuelling of conspiracy theories. He claimed that doctors and the pharmaceutical industry were hiding what they really knew about effective treatments for cancer. He was defended by the former Premier of Queensland, Joh Bjelke-Petersen.

After enquiries revealed no evidence to support his claims, he was driven out of Australia and New Zealand and established himself in the Cook Islands. Patients flew there to be treated, omitting to ask the obvious question, is it likely that the only person in the world who knows how to treat cancer would do so from the Cook Islands, a beautiful but minuscule Pacific island nation? In fact, it was widely rumoured that Brych bribed members of the then Cook Islands government to be allowed to stay, and when the government changed he was forced to flee. His legacy lives on; the cemetery where his patients are buried is known as the 'Brych yard'. Eventually he found his way to California where ultimately he was convicted of fraudulently impersonating a qualified medical practitioner, and jailed.

Herbs, vitamin and minerals (3d)

Many plant preparations contain substances which have the potential to alter human physiology. Use of untested herbal preparations is fraught with danger. They may interact with orthodox treatments and may have their own side-effects. On the other hand the list also includes a small number of agents which are indeed effective in cancer treatment.

As a positive example, PC-SPES (PC stands for prostate cancer, and 'spes' is the Latin word for hope) is a

combination of eight herbs which has been subjected to a certain amount of scientific scrutiny and clearly shows efficacy.

Studies have been carried out in the laboratory on prostate cancer cell lines, in mice, and in humans. The tests showed that prostate cancer cells were induced to shrink or die in the presence of the preparation. Interestingly, PC-SPES causes oestrogenic side-effects (that is, side-effects similar to those of administering the female hormone oestrogen), strongly suggesting that the mixture includes phyto-oestrogens (herbs with oestrogenic properties). As oestrogens are already known to be an effective form of treatment for prostate cancer, PC-SPES may be no more than another form of such treatment. Further study is warranted.

St John's Wort (*Hypericum perforatum*) is a herbal preparation which has been shown in controlled studies to have antidepressant properties. It is as useful as orthodox mild antidepressants but has not been tested against the newer or stronger antidepressants.

Vitamin C is a treatment which was originally proposed as being useful for prolongation of survival in patients with widespread advanced cancer. However studies carried out in the Mayo Clinic and elsewhere have shown clearly that it has no such effect. Thus vitamin C is a disproven, not an unproven treatment.

Vitamin E and beta carotene are antioxidants. It was proposed that their use could reduce the development of cancers in persons predisposed.

Controlled trials in heavy smokers however showed that, far from reducing the incidence of lung cancer, the combination appeared to increase it. This example shows the danger of using unproven treatments that have not been subjected to clinical trials.

No matter how good the theory might be, the only way to find out with certainty whether a treatment works is to subject it to a clinical trial.

Diet and nutrition methods (3e)

Some of these methods have the potential to do great harm. In particular, many so-called cancer diets are based on the false premise that a cancer patient's body needs 'cleansing'. Thus patients may restrict themselves to grapes, or beetroot, or as in the Gerson diet, to large numbers of fruit and vegetable juices but little else. Such an approach will undoubtedly lead to rapid weight loss and greater debility.

In Australia, Tahitian noni juice has become popular recently. There is no evidence that it has value in cancer treatment and it doesn't even have an appealing taste (or so I'm told). In cancer treatment it is about as useful, or as useless, as orange juice.

Recommended cure

I have my own natural cure for cancer. It has all the qualities demanded of such a cure. This substance was first introduced to Europe in the 16th century, from an ancient and now vanished civilisation. There are no records of cancer appearing in this ancient people. It was said to have magical properties and warriors ate it for its strength before doing battle. The plant was so important, that men abstained from sex for 10 days prior to planting its seeds, to propitiate the gods. Every cured cancer patient that I have know has eaten it. Its Latin name (*Theobroma cacao*) means 'food of the gods'. It is in fact chocolate. I advocate it for all cancer patients.

Orthodox and unorthodox treatments alike can only be recommended after they have been subject to adequate clinical testing.

Note

1 www.canceralternatives.com

Reading List

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