Reflection & Reaction

Use of alternative cancer medicine in India

The use of complementary and alternative medicine (CAM) by cancer patients is becoming widespread. This is a reflection of the many needs and concerns that are currently not being met by conventional medical practice. Significant proportions of cancer patients in developed countries use complementary therapies as adjuncts to conventional symptom management to improve their quality of life.[1] However, the situation in less-developed countries such as India, is quite different. Around 80% of cancer patients have late stage incurable disease when first diagnosed.[2] This not only complicates the treatment options, but also makes palliation difficult. Procurement of oral morphine for the treatment of pain in terminal cancer patients is another problem because of cumbersome legislation.[3] In remote parts of the country, patients have limited access to medical services and many are compelled to try alternative medicines, including naturopathy, biopathy, homeopathy, home remedies, wheatgrass therapy, hydrotherapy, accupuncture, autourine therapy, osteopathy, and vipasana.[4]

About 70% of the Indian population obtain medical help from private physicians, and nearly half of those seek help from alternative or traditional medical practitioners. Appalling poverty and hygiene, and a complex social dynamic, pose major hurdles in treatment efficacy.[5] Cancer patients often report to clinics when their malignancy has reached an advanced stage. It is possible that many factors, such as ignorance, socio-economics, poor roads and transportation, lack of communication facilities, inadequate medical facilities in the primary healthcare sector, and poor infrastructure, all contribute to this situation. For example, a recent estimate has shown that there is a shortfall of about 750 teletherapy machines.[6] Since a majority of the population is not covered by insurance, financial constraints become a major obstacle for many patients in their fight against cancer.

Great advances have been made in the treatment of some tumours and new advances in surgery, radiotherapy, and chemotherapy has lead to an increase in cure rates—but at a price beyond the reach of many cancer patients living in the developing world.[7]

There are limited studies on the use of CAM by Indian cancer patients. In Kolkata, I interviewed 200 tissue-biopsy-confirmed cancer patients, or their caregivers, on why they were trying an alternative cancer therapy called Psorinum. Since the publication of an anecdotal report alleging improved survival among many people with advanced-stage cancer,[8] both the public and many oncologists now regard this approach as effective. This unconventional treatment comprises a combination of homeopathy and natural medicines along with conventional supportive care. The responses to the survey are shown in table 1. In general, many patients claimed that they were trying Psorinum because there was either no other option or because of financial constraint. The survey showed that 118 men (59%) and 82 (41%) women were trying the therapy and of these, 85% came from urban communities and 15% came from rural areas. Most patients had gastrointestinal cancer (57%), while 21% had lung cancer, 12% had carcinoma of another major organ, and 10% had other cancer types. Furthermore, and strikingly, nearly 60% of the patients were over 60 years of age.

Other popular alternative medicines used in India for cancer treatment include Ayurveda, and herbal, natural, tribal, and folk medicines. The Ayurvedic medicines, Valipani, Navjeevan, and Kamdudha, have shown efficacy in some leukemia patients.[9] In addition, another

Table 1. Patient response when asked why they were using an alternative "anticancer" medicine

Rank	Category	Response	Number of patients (n=200)
1	No treatment options	Advice of oncologists No specific treatment recommended by oncologist Not responding to conventional treatment	40 (20%)
2	Financial	Financial and economic problems No health insurance Treatment in private clinic too costly Already invested a considerable amount in conventional treatment	32 (16%)
3	Quality of life	Patient too weak to undergo or continue chemotherapy Too old for conventional treatment Adverse side-effect to radiotherapy	30 (15%)
4	Advertisement	Advice of a friend who used a certain therapy Read in newspaper	25 (12·5%)
5	Pain management	Like to use this therapy primarily for palliation	23 (11·5%)
6	Patient management	Live near the clinic and easy to manage the patient at home Availability of doctor at all times of the day and night	15 (7·5%)
7	Multimodal therapy	Like to use alternative medicine along with the conventional treatment	14 (7%)
8	Frustration	Not convinced with oncologist's advice Need further information about cancer and options	10 (5%)
9	Faith	Belief that homeopathic medicine can cure cancer	8 (4%)
10	Experimental	Suffering from pancreatic cancer; would like to try an experimental therapy	3 (1·5%)

Ayurvedic formulation, Maharishi Amrit Kalash, is proving to be effective in controlling the side-effects of chemotherapy.

Until there is a dramatic improvement in cancer mortality using conventional treatments, CAM will continue to attract many cancer patients. With the high propensity for late-stage diagnosis, many treatments offer little more than palliative care, and it is possible that CAM approaches will play an important role in those situations when cure is no longer a realistic objective.

The findings of the survey reported here suggest that we should have an open mind about the use of CAM. About 50% of the world's cancer burden is carried by developing countries that, ironically, have access to only 5% of the resources available to fight the disease. In the developing world, and arguably the developed world, CAM may become an important component of modern oncology if integrated properly in to mainstream medicine.

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Cystic Fibrosis heterozygosity: Darwinian bet on cancer protection?

In the April issue of *The Lancet Oncology*, Mel Greaves proposed a neo-Darwinian viewpoint on cancer causation.[1] The author suggested that the current risk for skin, breast, and prostate cancer might be enhanced by some of our ancestral adaptive advantages related to migration or reproduction. He admits, however, that there is limited genetic proof to fully endorse this theory in humans.

Although controversial, inherited advantage represents the most solid explanation[2] for the high incidence (about 5% in Caucasian populations) of heterozygous mutations in the cystic fibrosis (CF) gene; a somatic gene that blocks the epithelial-cell ion channels when mutated and leads to multiorgan dysfunction in homozygotes. Theories of selection-induced CF mutations causing protection against bacterial diseases have been classically supported, but also reproductive advantages have been suggested among subgroups of heterozygote carriers.[3]

The possibility of an inverse relationship between CF gene mutations and cancer incidence was first reported among a Welsh population, in which a lower than expected rate of certain tumours was found for CF carriers.[4] Additional analyses showed no increased incidence of any cancer in the carrier group, while lower risks for certain malignancies, such as melanoma, were confirmed in heterozygote individuals.[5]

This data, and that of Neglia and co-workers[6] who found no increase in the overall cancer incidence among CF homozygotes despite higher rates of digestive-tract tumours, stimulated an experimental study[7] that reported a stronger inhibition of human breast-cancer proliferation in mice with 1 or 2 copies of the mutated CF gene. It was suggested that ion-channel blockades, leading to high concentrations of extracellular ATP, caused the growth inhibition. Likewise, overlapping pathways have also been used to explain the reduced invasiveness seen in human prostate cancer-cells in which ion channels were blocked pharmacologically.[8]

We agree that competitive procreation may be the primary endpoint of evolution, but it is hard to justify that *human evolution* is trying a fecundity advantage at any price, if this means the perpetuation of risky genotypes that may cause increased cancer incidence in future generations. If we speculate based on CF heterozygosity as the best model of adaptive mutation in white populations to date, then current data, showing no increased risk of cancer among CF carriers, are pointing away from the hypothesis proposed by Greaves.[4,5,9] Further population-based and experimental evidence is now needed to address the intriguing possibility that CF heterozygosity may prevent melanoma, breast, or prostate cancer.

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