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Integrative Therapeutic Options for Treating Stage Four Breast Cancer

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Abstract

Traditional Western medicine treats breast cancer – the most commonly occurring cancer in women with some combination of surgery, chemotherapy and/or radiation therapy. Few doctors' council their patients to use complementary modalities and some forbid their use. However, complementary therapies in the form of agents or activities that minimize exposure to toxins, detoxify the body, strengthen the immune system, increase cellular energy, promote circulation, reduce inflammation, alleviate pain and create a hostile internal environment for the growth of cancerous cells without damage to normal healthy cells have been shown to enhance survival and reduce morbidity of cancer patients. Some of these complementary modalities are presented here as options for both oncologists and patients to consider.

Introduction

Breast cancer is the most commonly occurring cancer in women and the second most common cancer overall. In 2018, more than 2 million new cases of breast cancer were diagnosed globally [1]. Traditional Western medicine treats breast cancer with some combination of surgery, chemotherapy and/or radiation therapy. All three of these modalities have side effects and a woman diagnosed with breast cancer must decide which treatments she will use (if any) to prolong her life. The information available to patients is diverse and often contradictory, so this decision is far from simple. Women are advised to decide on their treatment shortly after being diagnosed, when they are emotionally most vulnerable and when they have the least amount of information available to them.

What few medical doctors share with their patients is, that complementary therapies can strengthen the body, promote the destruction of cancerous cells, minimize some of the side effects of chemoradiotherapy, and accelerate recovery following surgery. In this article some of those complementary modalities are presented for the benefit of doctors who treat cancer patients and for patients who want more options.

The complementary modalities that the author presents in this paper fall into five categories based on their function with many of the modalities having multiple functions. Cancer patients may use any of these options with or without conventional Western therapies. For a more comprehensive list of complementary cancer therapies, read Bollinger's book, Cancer: Step outside the box [2].

Remove the source of the cancer & detoxify the body

Source of cancer: While few of us know what caused our cancer, it is important to remove or avoid all possible carcinogens from our external environment. These include chemical pollutants found in air, water, food, cosmetics and household cleaners; mould and other microbes; electromagnetic pollution from wireless technology and electrical/electronic equipment; ionizing radiation; and stress associated with people, finances, etc. Constant stress prevents healing so minimizing stress, both physical and emotional, is critical for recovery.

Dental hygiene: Good dental hygiene is also important for recovery. Metal implants, silver/mercury amalgam fillings and root canals have been linked to illness and these need to be removed/replaced by a qualified holistic or natural dentist who can do it safely with proper follow-up. Mercury is a neurotoxin and leaches into the mouth. These fillings need to be removed safely with appropriate ventilation to protect both dentist and patient. Many chronic diseases are a result of root canal surgery and root canals have been associated with breast cancer [3,4]. Dr. Thomas Rau at the Paracelsus Clinic in Switzerland found that 98.5% of the 150 women he treated for breast cancer had one or more teeth with root canals on the same meridian (Chinese meridian system) as the original breast tumor (Figure 1) [5].

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Few dentists realize how dangerous root canals are. A root canal is a dead tooth that provides a breeding ground for microorganisms that can survive in an anaerobic environment. The microbes that inhabit the tooth release toxins leading to chronic ill health and an impaired immune system. With the constant release of toxins it is difficult to recover from cancer. Several books are now available on the dangers of root canals including root canal cover-up [3] and the toxic tooth [4].

Detoxification: Once toxins are present in the body it is important to remove them under the supervision of a qualified health care practitioner. Some combination of saunas, colonics, coffee enemas, probiotics, chelating agents, oxygen/ozone therapy, various supplements, and nutrient dense food high in fiber can be used to detoxify the body. The ideal order of detoxing is to start with the colon, followed by cleansing of parasite, kidney, liver/gall bladder, and blood [2].

Support the immune system

A strong immune system helps to eradicate cancerous cells in the body so strengthening the immune system is important. This can be done with high dose Intravenous (IV) vitamin C, ozone and/or oxygen therapy and exposure to the sun or UVB light bulbs for vitamin D production.

Vitamin C: Vitamin C acts as an antioxidant, kills cancer cells, and strengthens collagen which in turn interferes with metastasis [2]. Vitamin C IV (around 50 g per session twice weekly) minimizes fatigue and insomnia and enhances cognitive functioning, which are common side effects of chemotherapy [6]; enhances the cytotoxicity to cancer cells of chemotherapeutic drugs [7]; allows for the use of lower chemotherapeutic concentrations [8]; and reduces risk of mortality from breast cancer [8]. Oral liposomal vitamin C is also beneficial as this form passes through the stomach, is absorbed by the intestines, and released into the liver where it enters the blood stream. The common dosage recommended for oral vitamin C is 1,000 mg/day although dosages as low as 500 mg in combination with 400 mg of vitamin E have been shown to be beneficial [9]. In a meta-analysis that included 10 studies, post-diagnosis dietary vitamin C intake was statistically significantly associated with a reduced risk of total mortality and breast cancer-specific mortality [8].

Ozone: Ozone therapy is used globally but has received very little government support in the US. Doctors, especially those associated with the Society of Progressive Medical Education (SOPMED) hold medical conferences and training sessions on how to apply ozone for various ailments [10]. Because ozone is an oxidizing agent that leads to production of free radicals known to be biologically harmful, one would expect injection of ozone into the body to damage cells and organelles. However, when a small amount of ozone is slowly introduced to the body, it stimulates the production of antioxidants, and these beneficial chemicals repair free radical damage throughout the body.

Ozone can be used as an adjunct to cancer therapy and has numerous beneficial health effects [11], including the following: enhances reduction of free-radicals and strengthens antioxidant activity; increases metabolism of oxygen in the case of tissue hypoxia; facilitates transfer of oxygen trapped in the oxyhemoglobin in red blood cells; activates microcirculation; modulates autoimmune activity with production of cytokines (interferon, tumor necrosis factor, interleukins, etc.); kills microbes, especially those that are anaerobic; reduces pain; reduces inflammation; stimulates tissue regeneration and promotes healing after surgery.

For cancer, the best way to administer ozone is to introduce it into the blood stream by direct IV, major or minor autohemotherapy and rectal or vaginal insufflation. IV injections must be done in a doctor's clinic, although there are now ozone generators for in home use for rectal or vaginal insufflation. Pure oxygen from an oxygen tank needs to be used for ozonation since air has nitrogen compounds that can become toxic during air ionization and these should not be introduced into the body. It is also possible to inject ozone directly into a solid tumor.

Vitamin D & UVB radiation: We live in a society that has been taught to avoid the sun for fear of getting skin cancer. While excessive exposure to the sun may contribute to skin cancer for some, there is mounting evidence that we require UVB exposure and vitamin D to remain cancer-free. Vitamin D is believed to inhibit tumor development and growth and reduce mortality for at least 18 vitamin D-sensitive cancers [12]. For cancer of the breast, colon, rectum, esophagus, other biliary, and vulva the relative risk of mortality is higher than for incidence, possibly suggesting that the maintenance of adequate vitamin D levels is more critical for limiting tumor progression than for preventing tumor onset [13]. Indeed, the health benefits of sunlight appear to outweigh the risk of skin cancer [14]. In northern latitudes a deficiency or insufficiency of vitamin D is common especially during the winter and the lack of vitamin D production from minimal sunlight exposure may be associated with the higher risk of fatal breast cancer [15].

Clearly, vitamin D is another important part of complementary therapy. While the easiest is to eat foods rich in vitamin D (fish, eggs, milk, mushrooms, etc.) or to take vitamin D supplements or cod liver oil, a better method is to be exposed directly to sunlight for 20 min to 30 min daily around noon. In seasons or countries were sunbathing is not possible, exposure to UVB light bulbs at a wavelength of 311 nm promotes the body's ability to produce vitamin D and is especially important for people who are unable to absorb vitamin D from their food and supplements [16]. Full body exposure to a UVB light for a few minutes a day is sufficient to keep vitamin D at optimal levels. Ideally a UVB-narrowband lamp works best for vitamin D production [17] and these are readily available for in home use in countries that do not require a prescription for their use.

A review of the literature on the role of vitamin D in cancer prevention concluded that the majority of studies found a protective relationship between sufficient vitamin D status and lower risk of cancer. The evidence suggests that efforts to improve vitamin D status could reduce cancer incidence and mortality at low cost, with few or no adverse effects [18].

Increase cellular energy

Many of us have sluggish circulation and under-active mitochondrial activity within our cells and when cells don't have enough energy, they can't perform their work. Both Pulsed Electromagnetic Field Therapy (PEMF) and Light Therapy (LT) can help with circulation and cellular energy production and both have been successfully used as an adjunct to cancer therapy.

Pulsed Electromagnetic Field Therapy (PEMF): Pulsed electromagnetic field therapy has been used in countries around the world for decades and has been recently approved in Canada to improve circulation, reduce inflammation and alleviate pain.

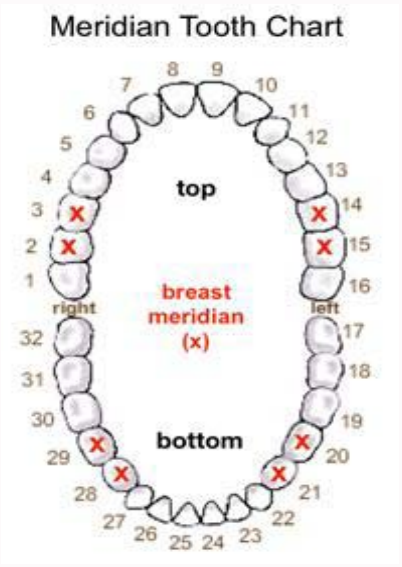

Figure 1: Meridian tooth chart showing teeth (×) that are on the breast meridians.

Many different products (mats, pads, probes, rings, cylinders) are now available for whole body exposure as well as localized exposure and these can be used daily or weekly to minimize the side effects of chemoradiotherapy and to speed recovery following surgery. Some of the technology has a pulse-based biofeedback option (ONDAMED, http://www.ondamed.net/en/) that enables the doctor/operator to select the specific frequencies that a person needs, while others have a built in systems that determines ideal frequencies based on body impedance (SEQEX, http://www.seqex.it/ion-resonance/?lang=en). Many PEMF devices have a bank of frequencies, waveforms, with adjustable intensities and exposure times.

Frequency, waveform, pulse rate, intensity, duration of exposure, dose, time of exposure and the local geomagnetic field are all important factors to consider when using PEMF therapy. Favorable and unfavorable electromagnetic frequencies have been identified for various types of cancers [19] and tumor-specific frequencies have been tested for different tumor types with promising results and no adverse side-effects [20]. In one study the greatest death of malignant breast cancer cells (MCF7) occurred at a PEMF frequency of 20 Hz, at 3 mT power density for 60 min of daily exposure over a three day period with no damage to non-malignant breast tissue [21]. PEMF therapy provides a promising therapy for different types of cancer alone or in combination with conventional and non-conventional (light, heat, diet, etc.) therapies. When used with conventional therapies (surgery, chemoradiotherapy) it minimizes myeloid toxicity and other side effects and enhances quality of life parameters [22,23]. Markov [24] discusses the history of PEMF therapy.

Light Therapy (LT): Light therapy is known by various names including heliotherapy, phototherapy, photo medicine, Photo Bio Modulation (PBM) and low Level Light/Laser Therapy (LLLT). Previous uses were restricted to rickets, tuberculosis, and treatment of various skin conditions, seasonal depression, and neonatal jaundice. During the past twenty years LLLT, especially in the red/infrared part of the visible light spectrum, is becoming a new treatment modality in supportive care for breast cancer. Red/IR wavelengths penetrate deeply into the body. These wavelengths stimulate cellular ATP energy production and increase nitric oxide concentrations, which in turn dilates blood vessels and improves circulation. LT is a non-invasive treatment option used to stimulate wound healing and to reduce inflammation and pain following surgery (mastectomy, lumpectomy, and lymphedema) although the optimal parameters for clinical applications have yet to be determined [25]. LT has been used to minimize side effects associated with radiation and chemotherapy such as oral mucositis, radiodermatitis, hemotherapy-induced peripheral neuropathy, and osteonecrosis of the jaw [26]. Karu [27] reviews the mechanisms of red and near infrared light therapy in mammalian cells and focuses on the role of cytochrome c oxidase, mitochondria and ATP production and signaling.

Both PEMF and LT are available for in home use without the need to visit a clinic for these treatments and the price of lasers and light emitting diodes is becoming more affordable. However, since red light stimulates cellular energy production, use of this directly on solid tumors should be done under the supervision of a doctor who can recommend the dose, duration, light intensity and can follow-up with scanning technology to ensure the light is not promoting cancer growth.

Starve cancer cells by removing their energy source

Glucose: Cancer cells feed on glucose. By reducing to a bare minimum sugars and starches in the diet, cancer cells can be starved of their energy source. Several "low carbohydrate" diets will work including the ketogenic diet, Atkins diet, and Mercola's fat for fuel diet [28]. There is also the Budwig diet [29], Gerson therapy [30] and Majalca's diet and cancer protocol that allows for more carbohydrates but also increases alkalinity in the body [31]. Therefore, a diet low in carbohydrates or one that makes the body more alkaline can facilitate recovery from cancer. Cancer wards that provide fruit juice and cookies to their patients undergoing chemotherapy are doing them a disservice as are doctors who don't provide dietary advice to their patients.

Create a hostile internal environment for cancer cells

Cancer cells prefer an acidic, anoxic environment at body temperature. Consequently, eating a diet or talking supplements that increase tissue alkalinity, increasing the oxygen content of cells, and increasing body temperature (above 42°C) create a hostile internal environment for cancer cells and can augment the cancer killing effects of conventional therapies without damage to healthy cells.

Oxygen: All cells in the body require oxygen and if the oxygen supply is limited, cancerous growths can result, a concept attributed to Warburg, a two-time Nobel Prize winner [32]. When cells don't receive enough oxygen they can morph into cancerous cells that rely on fermentation for their energy source. Consequently, increasing the oxygen content of the body creates unfavorable conditions for cancer development and growth. Oxygen content of tissues and cells can be enhanced using hyperbaric oxygen, ozone therapy and/or mild aerobic exercise. Ozone can be introduced to the body via ozone IV (at a doctor's clinic) or via rectal or vaginal ozone insufflation that can be done at home. The ten-pass ozone systems appear to be the most effective at oxygenating the blood as it provides more ozone than a one-pass system. Low level ozone oxygenates the blood and tissues, increases antioxidant activity in the body, and kills microbes that may contribute to tumor growth.

Hyperthermia: Temperatures above 42°C cause minimal damage to normal cells but are toxic to cancerous cells. Localized or full body hyperthermia provides a hostile environment for cancer growth.

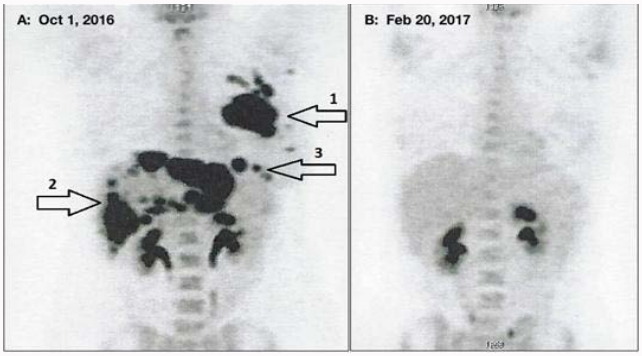

Plate 1: Whole body PET-CT scan of a 29-year-old female with stage 4, triple negative breast cancer. A: Shows a 77 mm × 55 mm primary tomor in the left breast (arrow 1); multiple widespread liver masses (arrow 2); and an upper left nodular abdominal lesion (arrow 3) prior to treatment (Oct 1, 2016); B: Is a follow-up scan 6 months later, Feb 20, 2017, showing complete remission. Source: Iyikesici et al. [38].

Heating can be done using saunas, hot tubs, heating pads or medical devices, like OncoTherm from Hungary that uses a combination of heat and Rife-like radio frequencies to destroy cancerous cells [33]. The American Cancer Society states that hyperthermia is currently being tested for various types of cancer including bladder, breast, cervical endometrial, head and neck, esophagus, kidney, liver, lung, leukemias, melanoma, neuroblastoma, ovarian, pancreas, prostate, sarcoma, and thyroid [34].

In one study [35], the control group-consisting of 105 post-surgery patients were treated with radiotherapy and/or chemotherapy. The hyperthermia group consisted of 35 patients who also received whole-body hyperthermia. Both groups were followed for 70 months. In the control group (105 patients), 12 (11%) died and 61 (58%) developed metastasis within a mean period of 36 months. In the hyperthermia group (35 patients) no patient died and only 3 (9%) developed metastasis within 52 months, clearly documenting the beneficial effects of hyperthermia in combination with traditional therapies.

Data from both preclinical and clinical trials have demonstrated improved antitumor immune responses with the addition of mild hyperthermia. The molecular mechanisms responsible for this improved immune response include the generation of heat shock proteins, the activation of antigens and changes in circulation of lymphocytes [36]. By better understanding the mechanisms involved doctors and scientists can perfect the use of hyperthermia as an adjunct treatment for cancer patients.

Example of integrated therapy to treat stage 4, triple-negative breast cancer

Stage 4 breast cancer-cancer that has spread to other parts of the body – is often lethal with only 22% of women surviving beyond 5 years [37]. Triple negative breast cancer is particularly aggressive, prone to metastasize, and more difficult to treat successfully than other types of cancer because it doesn't have receptor-sites for hormonal therapy.

Here is a case study of an overweight 29-year-old women with Stage 4, triple-negative breast cancer that had metastasized to lymph nodes, liver and abdomen (Plate 1A) [38]. She received integrated therapy consisting of: (1) insulin-potentiated chemotherapy that involved mild hypoglycemia achieved through a 12-hour fast and pharmacological doses of insulin prior to each administration of chemotherapy; (2) hyperthermia with body temperature raised to 45°C (12 sessions for 60 min each, using OncoTherm EHY-3010 HT device); (3) hyperbaric oxygen (12 sessions for 60 min each at 1.5 atmospheres using Quamvis 320 hyperbaric oxygen chamber); and (4) a ketogenic diet. She was told to avoid bread, pasta, rice, potatoes, sugar honey, and fruit; and was encouraged to eat eggs, leafy greens, above ground vegetables, high fat dairy, natural fats, meat, nuts and seeds. It was obvious she adhered to this diet as indicated by urinary ketones and a lower body mass index. This patient recovered after a six-month of treatment (Plate 1B). Two-months later, a mastectomy of the breast (which was not necessary) indicated no live cancer cells. Furthermore, this patient did not experience the adverse effects that are commonly associated with the current standard of care and this improved quality of life should also be considered when treating patients and designing research that compares integrated treatments to traditional therapy.

Conclusion

The purpose of this paper is to introduce the concept that complementary modalities are available to fight breast cancer (and other types of cancers) in addition to conventional treatments consisting of surgery and chemoradiotherapy. These techniques have been shown to be effective in promoting recovery and reducing the side effects of more conventional techniques and thus improving the quality of life for those suffering from cancer. The use of integrative medicine (conventional plus complementary treatments) shows considerable promise for cancer recovery and cancer patients and their families should be made aware of these treatments as should the nurses and doctors working in oncology. In this paper, activities that reduce exposure to cancer-causing elements in the environment, that detoxify the body, that support the immune system, that increase cellular energy, that starve cancer cells, and that create a hostile internal environment for cancerous growth without harming other cells in the body are presented. These activities/treatments include: removal of environmental toxins, removal of dental toxins, saunas to detox and to raise body temperatures, high dose vitamin C IVs, ozone therapy, exposure to natural sunlight or UVB lamps to enhance vitamin D production, hyperthermia, pulsed electromagnetic fields and light therapy to enhance circulation, increase cellular energy, reduce inflammation and pain. Many more complementary modalities are available to fight cancer than those presented in this paper and are provided elsewhere. Emotional support and stress reduction strategies are especially important and these are not discussed here.

Conflict of Interest

The author is not a medical doctor and is not offering medical advice. She is a research scientist and a breast cancer (stage 4) survivor and has used the therapies mentioned in this paper. The information presented here is meant to supplement information provided at a cancer clinic and to provide options for cancer patients to consider. No treatment gives guarantees but the chance of surviving cancer and reducing the side effects of traditional therapies is likely to be enhanced with one or more of the complementary modalities mentioned in this paper.

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