

Lecture on Cancer for Functional Forum: Jan 5, 2014

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I have been helping to prevent and treat cancer using nutritional and life style support for more than 40 years, and our center just celebrated its 40th anniversary a few months ago. I am not an oncologist and do not practice conventional oncology, though many of our patients use our program along with the protocol suggested by their conventional oncologist.

I depart from many of my integrative oncology colleagues by being more skeptical of conventional oncology strategies. Many integrative oncologists accept the conventional approach as a given. Then they attempt to reduce the adverse effects of conventional therapy with lifestyle recommendations, nutritional guidance and nutritional supplements.

I have no doubt that the results of patients who use a combined approach will be better than those who use conventional treatment alone. But, will patients using the combined approach enjoy better results than those who do not participate in any conventional protocol at all?

In other words, whereas most physicians are concerned about whether nutritional recommendations will interfere conventional treatment, I am concerned about “how much the conventional protocol will interfere with a non-toxic strategy.” It is unlikely that we will ever see studies that address this question because there is no financial motivation to do this type of study.

An example of a conventional protocol that I question is the automatic administration of radiation treatment to women who have had a lumpectomy for breast cancer, which is the standard of care for stage 1 and stage 2 breast cancer patients. Though studies indicate that such radiation reduces the risk of local recurrence, it does not improve survival, prevent regional metastases or prevent distant metastases. Many of my breast cancer patients forego radiation, much to the dismay of their conventional surgeons, oncologists and radiation oncologists;

but, I think such a decision is quite reasonable considering all of the possible negative effects from radiation therapy and the very limited positive effects.

Two of the questions that haunt all of us are: (1) what causes cancer? And (2) why do we have such an epidemic?

The answer to the first question was offered by Otto Warburg MD, PhD back in the 1920's and 30's when he showed that the metabolism of cancer cells is fundamentally different from that of normal cells. He showed that cancer cells create ATP energy molecules without using oxygen through anaerobic metabolism, while normal human cells create ATP energy molecules using oxygen with aerobic metabolism. With aerobic metabolism, one molecule of glucose theoretically produces 38 ATP molecules, while anaerobic metabolism produces only 2 molecules of ATP from 1 glucose molecule. This means that a cancer cells require approximately 20 times more sugar molecules to produce the same amount of energy as produced by one glucose molecule in normal cells. Therefore, one can see how our notion that sugar feeds cancer appears quite reasonable.

This difference in the metabolism between normal and cancer cells serve as the basis for the PET scan which is done by injecting radioactive glucose into the patient. Because glucose accumulates in cancerous tissue, the imaging PET scans clearly show cancerous activity most of the time.

Warburg went on to say what caused normal cells to become anaerobic. He said that cells become anaerobic in order to survive when the oxygen concentration of the cell is too low to make use of aerobic metabolism. The change to anaerobic metabolism may take a long time (many years) during which the cell is exposed to low oxygen concentrations.

At some point, the changes in the metabolism of the cancer cells become irreversible and no matter how much oxygen is supplied, the cancer cells remain anaerobic or cancerous. His theory also helps us to understand the difference between benign and malignant neoplasms. The oxygen concentration is higher

and of shorter duration in benign cells as compared to cancerous cells, but lower than that of normal cells.

Why are cells not getting enough oxygen and how does this relate to the current cancer epidemic. I think that Brian Peskin, author of "*The Hidden Cause of Cancer*", offers a reasonable explanation. Utilizing available medical literature, he suggests both the parent essential fatty acids, namely linoleic acid, which is an omega 6 fatty acid, and alpha linolenic acid which is an omega 3 fatty acid, are important components of cell membranes in the body. Based on scientific studies, he asserts that the intact structures of these components of the cell membrane attract oxygen into the cells. When these parent fatty acids are either replaced by other non-parental fatty acids or damaged parent essential fatty acids, the ability of cells to absorb oxygen from the bloodstream is inhibited.

One of the major changes that have occurred in our food supply over the last 70 years is the increase in shelf-life of our food. The processing of foods to improve shelf life by preventing rancidity of spoilage has resulted in the production of damaged or adulterated fatty acids. These replace the parent essential fatty acids linoleic and alpha linolenic acids . The replacement of these parent essential fatty acids with adulterated fatty acids and oils greatly reduces oxygen to the cells, thus leading to the conversion of cells to anaerobic cells which eventually can become cancerous.

Various chemicals, pesticides, toxic minerals and many other factors can also damage the fatty acids and produce adulterated fatty acids or directly poison cell membranes, resulting in reduced oxygenation of our cells. So, two major changes in our diet, namely the tremendous increase in adulterated fatty acids and the tremendous increase of sugar has played a role in the development of cancer and other degenerative diseases.

The distortion of cell membranes by the replacement of parent essential fatty acids by adulterated fatty acids may result in a reduction of 50% of oxygen delivered to the cells. Warburg's carefully done scientific studies suggest that a reduction of only 33% of oxygen to cells can result in cells becoming cancerous over time. Anything that results in the replacement of these parent oils by either

adulterated oils or inappropriate oils lowers oxygen to cells. Examples of inappropriate fatty acids are derivatives of the parent essential oils that are found in fish and fish oils supplements.

So, Peskin suggests that EPA and DHA, found in high concentrations in fish oil supplements may replace parent essential oils in cell membranes and contribute to reduced oxygen to cells and subsequent production of cancer. This is a highly controversial issue as many conventional and alternative practitioners routinely prescribe fish oil supplements and think they are doing something that is helpful to the patient.

Conventional oncology focuses on killing cancer cells or attacking over-expressed receptors and growth factors. Warburg would consider these changes in cells to be secondary to the primary cause of low oxygen. By not addressing the primary cause of cancer and focusing on these secondary manifestations, we shouldn't expect to see great results and indeed the therapeutic results of conventional cancer treatment are not very good.

Our prevention and treatment approach to cancer (and other degenerative diseases) involves the reversal of these cancer producing effects. We work toward helping patients reduce adulterated fatty acids by reducing all processed foods, reducing sugar intake, reducing exposures to toxic chemicals, using exercise to improve oxygenation, reducing excessive reactions to stress and helping patients to sleep healthfully.

In addition to helping patients change their eating habits to reduce sugar and processed foods, we use many additional strategies involving supplements that are relatively non-toxic. One of the supplements we use routinely with cancer patients is salvestrols. The rationale for their use is quite interesting.

During the past 30 years or so, studies in the United Kingdom and elsewhere have shown that cancer cells contain a specific enzyme CYP1B1. This enzyme is a member of the Cytochrome 450 family of enzymes. What is most unusual is that only cancer cells contain this enzyme, while normal surrounding cells do not.

It turns out that these enzymes appear to help protect us from developing cancer. Certain natural substances in organic fruits, vegetables and herbs are capable of interacting with the CYP1B1 enzyme to produce metabolites that induce cell death in cancer cells without any negative effects on normal cells. These natural substances are designated salvestrols and they seem to help us resist the development of cancer and may play a role in killing cancer cells in those who already are afflicted with the disease.

The fat soluble vitamins, such as vitamin D, vitamin A and vitamin K2 (we prefer the MK4 form), show evidence of anti-cancer activity by upregulating anti-cancer genes and downregulating pro-cancer genes and we make good use of them. We also use a balanced mineral formula since most people are deficient in many minerals and our soil is also deficient. We avoid recommending fish oil capsules, which distort cell membranes and may increase the risk of cancers, especially in the skin. We also pay attention to iodine, which has anti-cancer activity, and make use of several other anti-inflammatory factors in food and supplements, as well as supplements to enhance immune functioning.

Most recently, we have been paying attention to glycobiology, which involves the therapeutic use of sugars and carbohydrates. It turns out that we need at least 8 sugars to form glycoproteins in the body. These are essential for cell-to-cell communication to improve the function of the gut and the immune system. These sugars are: glucose, galactose, mannose, fucose, xylose, N-acetyl glucosamine, N-acetyl galactosamine and N-acetyl neuraminic acid. We utilize a supplement that appears to supply these sugars, as they are made only with great difficulty by the body. By supplying them with a supplement, we encourage cell-to-cell communication and improve the function of the gut and the immune system.

The jobs of the gut is to let the good guys into the bloodstream and ultimately to cells of the body. The failure of this function leads to malabsorption. The other function of the gut is to keep the bad guys from entering the bloodstream. The failure of this function results in a leaky gut. In a similar way, the immune system attacks the bad guys, including pathogenic organisms and

cancer cells, and does not attack the good guys which are our own cells or friendly bacteria. Failure of these functions contributes to the development of cancer, infectious diseases and autoimmune conditions. Supplying the sugars as a supplement improves the function of both the gut and the immune system.

We use a number of other simple, non-toxic therapies for many patients. For example, we often recommend relatively high doses of vitamin C which is given as an intravenous infusion. For a number of reasons, we include calcium and magnesium in these infusions. Other injectable strategies, such as the use of intravenous glutathione or Phosphatidyl choline may also be used.

With the recent increase of many diseases, including cancer, diabetes, asthma and autism in children, it is essential that we try to find the reasons for these serious changes. In addition to some of the elements previously described, I think we need to look at the drastic change in the vaccine schedule over the past 30 years. We need to address the possible negative consequences of this greatly increased schedule. Various conflicts of interests and financial factors contribute to keeping the public in the dark about the dangers of the current vaccine schedule.

We attempt to help guide patients to set the stage for the body to heal itself. This is done by meticulously avoiding the bad stuff and supplying the good stuff. This must be done in a positive way with an emphasis on patience. We attempt to educate patients about their health problems and illnesses while offering explanations and a rationale for what we are recommending. We believe that the healthcare-patient relationship should be one of mutual respect and partnership, rather than one that stresses the authority of the doctor. We spend a lot of time trying to educate the patient and believe the decisions about treatment should be made by the patient. The ability of the patient to carry on all of these difficult activities is largely based on a caring clinician who helps to instill faith and hope in the patient.