Oxidizing Cancer Cells to Death
A Simple, Highly Targeted and Low-Cost Universal Cure

By Mark Simon, Director, Nutritional Oncology Research Institute

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Introduction

The main challenge in treating cancer is killing cancer cells without causing harm to normal cells. Chemotherapy and radiation are highly limited by toxicity to normal cells and tissues. Is modern oncology decades behind the science that has illuminated new targets for cancer therapy? It certainly seems so.

Outlined here is a method for treating cancer that directly targets a key vulnerability within cancer cells. Utilizing this approach has yielded extraordinary responses without any systemic toxicity or adverse side effects. This has been accomplished without pharmaceutical agents, only natural nontoxic nutritional supplements and a unique dietary intervention. This method is highly targeted and directly focused on exploiting the number one weakness or Achilles heel of cancer, sensitivity to oxidation.

What if there is a universal way to kill cancer cells that is applicable to all forms and stages of cancer? And what if this method is completely nontoxic and harmless towards normal healthy cells? Have the clues been there for decades but ignored because cancer research is centered on high profit drug development? Has the profit driven pharmaceutical and medical system failed us in the pursuit of safe, effective and cost-effective cancer therapies? It certainly appears to be the case.

A major limitation of drug development is that only one single drug or drug component is evaluated, tested and approved at a time. Development of multi-targeted drugs or combinations of drugs is highly limited. FDA approves one drug at a time and then sometimes approves combinations of drugs. All pharmaceutical drugs are associated with adverse side effects, toxicity and widespread negative consequences. Immunotherapy is not without serious risks and side effects and has a very low response rate.

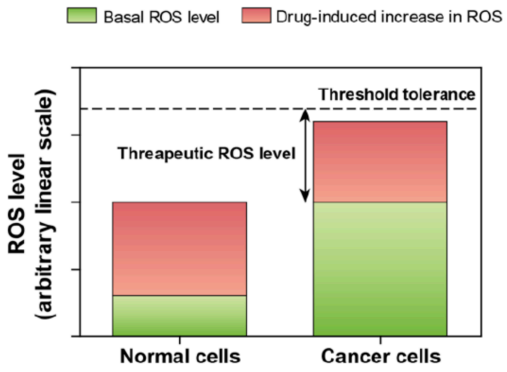
The most significant roadblock in finding a cure for cancer is the complete dismissal of nutritional interventions. Cancer cells have unique nutritional requirements that can be targeted therapeutically. We know with certainty that diet plays a critical role in cancer prevention. Nutrition is the solution to the prevention and treatment of every degenerative disease. Cancer is no exception.

This paper will explain the science behind an innovative and revolutionary approach to treating cancer that is highly disruptive and could potentially become the standard of

care in naturopathic and integrative oncology. This approach is unlikely to be adopted by mainstream oncology for multiple reasons.

A New Frontier in Cancer Research

Exciting new research is focused on a key difference between normal cells and cancer cells that enables selectively killing cancer cells while causing no harm to normal cells. This vulnerability of cancer cells involves oxidative stress (ROS-reactive oxygen species) which is much higher in cancer cells than normal cells. In reality, cancer cells are surviving near the edge of self destruction. Targeting this vulnerability or sensitivity in cancer cells represents a universal treatment approach for all forms and stages of cancer.



Cancer cells exhibit altered energy metabolism which is caused by dysfunctional mitochondria. Altered metabolism leads to the generation of an excess of reactive oxygen species (ROS). In a sense, cancer cells are carrying within a lethal oxidative time bomb. Unleashing this internal time bomb can be accomplished by disabling cancer cell's primary antioxidant defense systems.

Oxidative stress can be induced directly or through disabling antioxidant defense systems. Since cancer cells have an inherently high level of oxidative stress, simply disabling antioxidant defense systems causes cancer cells to be overloaded and oxidized to death. Apoptosis and ferroptosis are forms of regulated cell death that are fully reliant on oxidative stress overload.

Chemotherapeutic drugs kill cancer cells primarily through oxidation overload. DNA damage is secondary. Cancer cells become resistant to chemotherapy by an upregulation of antioxidant defense. Many studies support enhancing chemotherapy by lowering antioxidant defense. However, chemotherapy and radiation carry a significant risk of triggering a secondary cancer. This is a very important consideration today as cancer is being diagnosed in a much younger population.

Antioxidants - Friend or Foe?

Antioxidants may be important for the prevention of cancer but have no value in cancer treatment. Supplementation with certain antioxidants has been shown to raise cancer risk. Trials involving administration of antioxidants have failed to halt tumor growth or cause any death of cancer cells. Evidence shows that antioxidants actually fuels cancer's spread. This may sound unbelievable or surprising given all the marketing hype for antioxidant supplements and high antioxidant foods.

The definition of antioxidant is a substance that protects cells from the damage caused by free radicals (unstable molecules made by the process of oxidation during normal metabolism). Free radicals are atoms or groups of atoms that have a single unpaired electron. Oxygen molecules form into free radicals and oxidizing agents. Hydrogen peroxide is a well know oxidizing agent. Ozone is a gas which is a powerful oxidizing agent.

Antioxidant Defense Systems

Normal cells and cancer cells depend on antioxidant defense systems for survival and specifically to protect the cell from DNA damage caused by excessive oxidative stress. Cancer cells depend on antioxidant defense much more so than normal cells. Are methods available to weaken or disable antioxidant defense systems so that cancer cells are oxidized to death? Science has revealed that there are simple ways to disable the primary antioxidant defense systems.

The redox state of a cell is continuously monitored and precisely regulated by antioxidant defense systems. Redox balance is essential to prevent damage to DNA, cellular structures, proteins and molecules. Abnormal energy metabolism is the primary source of free radicals that can perturb redox balance.

There are two major cellular antioxidant defense systems. One is Glutathione (GSH) and has been extensively studied in relation to cancer. Glutathione scavenges free radicals (ROS) maintaining redox balance.

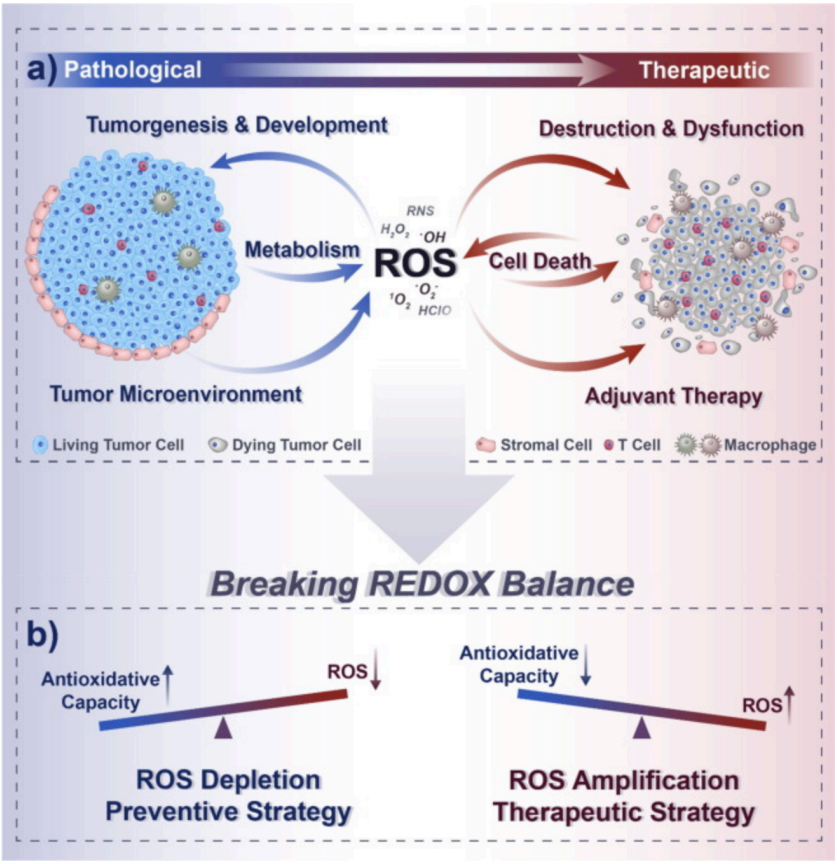
The second major antioxidant defense system is Thioredoxin (TRX). Thioredoxin has also been extensively studied in relation to cancer. Cancer cells are highly dependent on Thioredoxin for survival.

Both antioxidant defense systems have been identified to be involved in chemo-resistance meaning the cancer cells adaptive defense against chemotherapy. The same applies to radiotherapy. Weakening or disabling these antioxidant systems causes cancer cells to lose resistance to chemotherapy and radiation.

Chemotherapeutic drugs kill cancer cells primarily through oxidation overload. DNA damage is secondary. Cancer cells become resistant to chemotherapy by an upregulation of antioxidant defense. Many studies support enhancing chemotherapy by lowering antioxidant defense. Why not fully disable antioxidant defense and allow the endogenous oxidation to reach a cytotoxic threshold killing the cancer cell? This would mean that chemotherapy and radiotherapy are unnecessary. Surgery may become unnecessary in most cases as well.

Disabling Antioxidant Defense

Redox is a term referring to a state of balance between oxidation and reduction. Redox chemistry is an essential part of all living organisms. Redox balance is necessary for normal metabolic functions which does not damage DNA or cellular components.



Drugs are being developed to disable antioxidant defense but there is another way that is much safer and is very inexpensive. One example of a drug being studied is a repurposed rheumatoid arthritis drug called Auranofin which disables the Thioredoxin antioxidant defense system. Another example is Buthionine Sulfoximine which depletes Glutathione.

Here is where nutrition powerfully enters into the solution. A dietary approach is available for disabling the Glutathione antioxidant defense system. This involves limiting the intake of two amino acids, methionine and cysteine. Glutathione is synthesized from three amino acids, cysteine, glycine and glutamate. Cysteine is a non-essential amino acid. Methionine is essential but at a very low level. Some methionine is converted to cysteine so methionine intake must also be restricted but to the same extent as cysteine.

A plant-based diet is significantly lower in methionine and cysteine than a typical animal protein centered diet. Refining a plant-based diet to be sufficiently low in methionine and cysteine is relatively straightforward and practical. It is essentially a diet of strictly fruits and vegetables for short intervals. Nuts, seeds, grains and beans contain significant levels of methionine and cysteine so they must be excluded from the diet. Information on a methionine and cysteine restricted diet can be found at www.howtostarvecancernaturally.com.

There are several different ways to disable the Thioredoxin antioxidant defense system with natural agents. Possibly the most reliable and efficient method is orally administered Sodium Selenite which is an inorganic selenium salt. Sodium selenite has been studied for over 50 years for its selective anticancer activity. Sodium Selenite is an inorganic form of selenium well know for its potent anticancer activity.

Building a Redox Based Cancer Treatment Protocol

Oxidizing cancer cells to death can be achieved by sufficiently tipping the redox balance within cancer cells towards excess oxidative stress (ROS). Dual disabling of the Glutathione and Thioredoxin antioxidant systems has been experimentally shown to selectively trigger cancer cell death by oxidative overload.

The treatment protocol must eliminate all antioxidant supplements including vitamin C, NAC, Vitamin E Tocopherol and Vitamin A. Antioxidants contained in food are not a limiting factor,. However, it is advised to avoid drinking vegetable juices which may contribute excess exogenous antioxidants.

Dietary restriction of methionine and cysteine is known to impact glutathione synthesis. The limitation is that all foods contain methionine and cysteine. A diet of very low methionine and cysteine has enormous therapeutic value but another element is required to fully deplete cysteine. Vitamin B6 (P5P) comes to the rescue as a way to non-enzymatically deplete cysteine. Iron is incorporated as a catalyst for the reaction between Vitamin B6 (P5P) and cysteine to proceed at a high rate. Cysteine is broken down into hydrogen sulfide, pyruvate and ammonia. These breakdown products are in very small amounts and of little consequence to normal cells.

Disabling the Thioredoxin antioxidant system can be achieved with the administration of various natural compounds and off-label drugs. The natural compound of choice is sodium selenite because of its ideal pharmacology. Sodium selenite can be orally administered with special formulations that avoid GI upset.

A complete oxidative protocol is therefore based on a methionine/cysteine restricted diet, Vitamin B6 (P5P), Iron and Sodium Selenite. Other elements can be incorporated that induce additional oxidative stress or added support for ferroptosis induction. One example for ferroptosis induction is high PUFA oil.

Both Sodium Selenite and Vitamin B6 (P5P) individually exhibit potent anticancer activity. Utilizing these agents together within a highly targeted therapeutic system greatly enhances their effects as individual agents. Achieving synergy is paramount in developing safe and effective cancer therapies.

Additional oxidative stress can be applied through the oral administration of high ozonide ozonated oils. This is a way to implement the equivalent of ozone therapy at home and on a continuous basis.

Regular physical exercise may be an additional means to elevate oxidative stress. Cancer patients tend to survive longer by engaging in regular aerobic exercise. This may not be an option for patients with highly advanced cancers.

Conclusion

Presented here is a revolutionary and cutting edge method for treating cancer that leverages the power of diet and inexpensive natural compounds. Small scale human clinical case studies have confirmed that this treatment approach is safe, highly effective and applicable to all forms and stages of cancer.

This treatment is highly cost effective because IV injections are unnecessary and the cost of the orally administered nutraceuticals can be as little as $300 USD per month. No expensive foods or kitchen equipment are necessary. The therapy is 100% home-based except for routine blood tests. The next challenge is disseminating this approach first among naturopathic physicians and integrative oncologists followed by mainstream oncologists.

About the Author

Mark Simon is the founder and director of Nutritional Oncology Research Institute which was establish in 2011. His research for the past 20 years has been focused on developing natural and nontoxic methods for cancer treatment. Mark Simon is involved in developing and manufacturing nutraceutical products for cancer therapy. Mark Simon is a Clinical Nutritionist and Certified Holistic Cancer Coach. He can be contacted by email at: msimon20@earthlink.net

Disclaimer: The information presented here is for educational purposes only and is not intended as medical advise. Please consult your healthcare provider prior to embarking on any treatments that are outside the standard of medical care.

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