Redefining the NORI Protocol

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Summary

It has been over 14 years since the initial application of the NORI Protocol. Over the years, much has evolved but one key element is fully intact. From the inception of the NORI protocol, sodium selenite has been at the core. Sodium selenite remains as the primary natural nontoxic agent that is universal for treating every form and stage of cancer.

The dietary aspect of the protocol has evolved and the level of methionine restriction has been greatly relaxed. A 100% plant-based diet is still an essential element of the protocol and is highly supportive in many different ways.

My objective has always been to simplify and streamline the protocol. The approach is highly targeted and focused on the key vulnerability of cancer cells. Today the pill count is minimal and following the NORI Protocol is simple, straightforward and uncomplicated.

I can visualize in the future, a very simple protocol incorporating a single tablet and a basic plant-based diet. The NORI Protocol is rapidly approaching such a reality. The introduction of SELQUINOX® is a major development in this direction along with relaxed dietary restrictions. This article outlines the most current implementation of the NORI Protocol and offers perspective on which components are most essential.

Sodium Selenite - Central to the NORI Protocol

I first discovered a scientific study on sodium selenite in 2007 that suggested that it is a selective chemotherapeutic agent. Sodium selenite when administered within a certain dosage range can trigger apoptosis in cancer cells while causing no harm to normal cells. My research uncovered many more studies supporting sodium selenite as an ideal agent for treating cancer in a nontoxic manner.

Much effort has been directed towards methods for oral administration of sodium selenite. Very small amounts of sodium selenite can trigger nausea when coming in contact with the stomach wall. As little as 1 mg of sodium selenite taken orally can trigger stomach upset. I developed and tried various methods for oral administration which included a sublingual tablet. This tablet was effective for most individuals but a

few could not tolerate this route of administration. So the answer was to focus on developing a very slow release oral tablet that is simply swallowed. This new tablet solved the challenges of orally administered sodium selenite.

Additionally, much energy was directed towards finding natural agents that would be synergistic with sodium selenite. My focus is on natural agents that are either water or fat soluble with very high bioavailability.

I will always assert my belief that sodium selenite is the most ideal natural agent for treating cancer. There is no need to modify it, conjugate it or alter it in any way. The answer is to create synergy with it through combining it with other pro-oxidants, dietary cysteine restriction, cysteine degradation and oxidative therapies.

Augmented Pro-Oxidant Therapy - Targeting the Achilles Heel

A few years ago, I realized that there is a real Achilles heel of cancer and that is exactly what the NORI Protocol has been targeting. Cancer cells exhibit a much higher basal oxidative stress (reactive oxygen species, ROS) level compared to normal cells. Oxidative stress is like krypton (as a superman metaphor) to cancer cells.

Augmented pro-oxidant therapy involves disabling antioxidant defense and generating oxidative stress simultaneously. This approach directly and efficiently triggers cancer cell death and causes no harm to normal cells.

There are two major antioxidant defense systems, glutathione and thioredoxin. Disabling these antioxidant defense systems is lethal to cancer cells but will not harm normal cells. Sodium selenite inhibits the thioredoxin antioxidant system. Diet and vitamin B6 (P5P) limits glutathione synthesis.

Reintroducing vitamin K3 into the protocol was an excellent decision. I developed SELQUINOX® which is a slow releasing combination of sodium selenite and a water soluble form of vitamin K3. Vitamin K3 hits many different targets within cancer cells but is mostly responsible for generating oxidative stress.

Molecular iodine is incorporated within the NORI Protocol as it behaves as a pro-oxidant unlike the iodide form of iodine which is an antioxidant. Molecular iodine is especially helpful in both preventing and treating breast cancer.

Nisin which is an antimicrobial peptide is incorporated because it causes an influx of calcium into cancer cells by opening pores in the cell membrane. There is solid scientific evidence demonstrating the anticancer mechanisms and safety of nisin.

Knowing that the NORI Protocol is targeting the principal Achilles heel of cancer gives me the assurance that this approach and direction is along the right path. Observing consistent results in patients reinforces my belief.

Targeting Cysteine - A Direct Challenge to Cancer Cell Survival

My interest in methionine restriction shifted a few years ago to focusing on cysteine. Cysteine is a non-essential amino acid that is supplied by the diet or is partially supplied from transsulfuration of methionine. Many scientific studies demonstrate that lowering intracellular cysteine is a key challenge to cancer cell survival. Cysteine itself is an antioxidant and is one of the three amino acids making up glutathione.

I discovered that cysteine can be degraded with a combination of vitamin B6 (P5P) and iron. The current NORI protocol incorporates vitamin B6 (P5P) and iron along with a low cysteine diet to limit the synthesis of glutathione.

Starving Cancer - A Dated and Invalid Concept

Because of great metabolic plasticity and other factors, it is not possible to starve cancer cells to death. Attempting to do so can impair the immune system and create harm to normal cells and organs. The NORI Protocol ***is not*** directed towards metabolic energy pathways involving glucose, glutamine or fatty acids. Methionine restriction does not starve cancer cells of energy. It can selectively trigger cell cycle arrest but not cell death. A cell death response is most likely due to restriction of cysteine which limits glutathione synthesis.

I do not support long term fasting and actually recommend no fasting at all to prevent excessive weight loss. Eating fruit is equivalent to fasting and possibly better in terms of treatment response and weight management.

Today, I believe that diet is important in maximizing the response to to the NORI Protocol but it is not a central element. A plant-based diet composed of mostly fruits and vegetables with small amounts of nuts, seeds, grains and beans may be ideal and offer the greatest therapeutic benefit. This dietary intervention minimizes a range of amino acids that are critical for tumor growth and cancer cell survival. A plant-based diet is instrumental in lowering inflammation and lowering potential cancer growth factors such as IGF-1 (insulin like growth factor) and insulin.

Diet is not the central mediator of cancer cell death and is not foundational to the NORI Protocol. Diet is supportive of augmented oxidative therapy. It is possible that the nutraceutical cocktail may be effective regardless of diet. I strongly support a 100% whole foods low-fat plant-based diet as the best for cancer prevention and treatment.

Ferroptosis - Elimination of Cancer Stem Cells

Ferroptosis is an iron-mediated form of cell death that that may hold the key for the elimination of cancer stem cells. The NORI Protocol is the foundation for ferroptosis and only a few simple additions creates a powerful ferroptosis protocol.

Ferroptosis involves lipid peroxidation chain reactions within cell membranes. For ferroptosis to occur, there must be sufficient incorporation of polyunsaturated fatty acids (PUFAs) within the phospholipid molecules of the cell membranes. The NORI Protocol limits saturated and monounsaturated fatty acids which are known to inhibit ferroptosis by stabilizing the cell membrane.

Low Sulfur Amino Acid, High PUFA, Alkaline Diet - A Dietary Foundation

I have redefined the dietary element of the NORI Protocol as a low sulfur amino acid diet. This definition means a low intake of foods that contain high levels of methionine and cysteine. Originally, my focus was on methionine until I understood that the key amino acid to be restricted is cysteine. Cysteine is required for the synthesis of glutathione.

Initially, the target level for methionine was less than 2 mg/kg of body weight per day. This level created excessive weight loss due to insufficient caloric intake. The level was revised to 4 mg/kg which was more sustainable. Today, the target level is less than 10 mg/kg of body weight per day. This may be revised further upward in the future to allow for an even greater intake of calorically dense foods.

High polyunsaturated fatty acid (PUFA) intake is essential for triggering ferroptosis. Flaxseed and hempseed oils are ideal sources of PUFAs.

Fruits and vegetables are alkaline forming foods while grains, nuts, seeds and beans are slightly acid forming.

Dietary intervention alone can treat some early stage cancers but is not effective for the vast majority of cancers. Dietary intervention is essential in lowering systemic inflammation, driving the extracellular fluid alkaline, lowering IGF-1, lowering and stabilizing insulin and strengthening the immune system.

Alkalization Therapy - Addressing the Tumor Microenvironment

Recently published studies demonstrate that an alkaline diet with the addition of a pH buffer offers enormous clinical benefit in cancer patients. I now realize that neutralizing acidity within the tumor microenvironment has profound implications in cancer therapy

and especially for immunotherapy. The tumor microenvironment is known to be consistently acidic and this is due to the abnormal metabolism of the cancer cells.

The NORI Protocol incorporates a pH buffer consisting of potassium bicarbonate, sodium bicarbonate, calcium carbonate and magnesium carbonate. Urine pH is measured at two time points per day and the pH buffer is taken one time per day. Some take it twice a day. The goal is to maintain urine pH at 8.0.

Probiotic Therapy - Immune Support and Controlling Inflammation

I have always recommended incorporation of fermented vegetables such as sauerkraut or kimchee. Now, NORI provided a unique probiotic composed of lactococcus lactis and lactobacillus lactis. These bacterial strains exhibit direct anticancer activity through there metabolic metabolites. One of these metabolites is nisin.

Intestinal bacterial are known to translocate to other organs of the body where they may have both beneficial or pathogenic effects depending on the bacterial strain. An optimal gut microbiome requires lots of dietary fiber, probiotics and certainly a plant-based diet. Animal proteins create a large population of pathogenic gut bacteria.

Natural Immunotherapy Protocol

The NORI protocol has a built-in immunotherapy component by default. There is significant overlap between the cytotoxic NORI Protocol and the NORI Natural Immunotherapy Protocol. Natural immunotherapy is intended for those in remission where the cytotoxic protocol is no longer necessary.

Cost Objectives

I understand that cancer patients seeking care outside mainstream oncology will face uninsured out of pocket costs. Hopefully, this will change and medical insurance will cover nutritional support programs for cancer patients and survivors. I have attempted to offer the NORI support program at the lowest cost possible while keeping NORI afloat.

The NORI support program is very inexpensive compared to all of the cancer clinics offering integrative and alternative therapies. For some, the cost of all the necessary nutraceuticals for the protocol can cost less that $500 per month. Initially when beginning the protocol, supervision is essential and this involves a significant amount of my time. I have been reluctant to offer the program in a cookie cutter form. Every patient is unique and requires personalized care.

Final Thoughts

Today, I feel gratified that I have had the opportunity to contribute towards researching and developing nontoxic methods for cancer treatment. Chemotherapy, radiation and surgery will soon become relics of a dark past in medicine.

I took on the task of developing sodium selenite because someone had to do it. My incentive was to fill a gap that is caused by patentability issues. There is no incentive for any pharmaceutical company to develop sodium selenite as a drug.

Another challenge in front of me is how to introduce sodium selenite and the NORI Protocol into mainstream oncology. Maybe naturopathic and integrative oncology may be the bridge for the NORI Protocol to be recognized for its potential.

It seems to me that alternative cancer therapy is all over the map with absolutely no unification of approach and underlying principles. Metabolic therapy with off label drugs and ketogenic diet is the most prevalent approach but it is not in alignment with a solid scientific foundation.

I strongly believe that effectively treating cancer requires a multifactorial and a holistic approach for optimal results. Cancer treatment must incorporate dietary and lifestyle factors along with emotional healing and balance. Exercise is known to be highly supportive during the treatment process.

I don't expect any significant changes to the NORI Protocol over the next year or two. New research always emerges that may shed light on new opportunities to enhance treatment response. There is one potential addition which is the incorporation of certain boron containing compounds that may create additional oxidative stress.

For further information or a no-cost initial consultation, feel free to reach out to me.

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