

Re-Evaluating Cancer Etiology: Better Understanding of Cancer as Chronic Disease

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Abstract

Cancer is a multifaceted complex disease manifest with devastating effects. The question extends beyond our understanding level, when cancer re-occurrence happens with more aggressive way, changing its original biological pattern. Why cancer is not an acute disease and gets cure in one go? Have we ever had a question in our mind? Why does it re-occur even after following a complete personalized cancer protocol? Where are we going wrong, that makes cancer re-occurrence more ground and completely changing the scenario of recovery? We are going to explore the all-possible causes to clear this confusion and understand it in easy way.

Keywords: angiogenesis; apoptosis; stem cell; metastasis; hypoxia

Introduction

Cancer is not an output of overnight activity. It took long time to grow inside and many a times it gave signal to us. However, all the time either we misinterpret it with other symptoms or just ignored it. When the ignorance is in extreme extent, it started manifesting unique way, despite being few common symptoms for almost all. Sometimes it is coming from oncologist part and sometimes from the patient. When a patient is visiting for back pain, frequent UTI, persistent body pain, fever and weakness, all these things are misinterpreted as calcium deficiency, normal fever, stress, anxiety and many more. Sometimes patients themselves address they have a wired feeling, which is not normal. We must listen to the patients and in first go, we should run all possible tests to diagnose properly. In addition, patients must listen to the oncologist and in case they are not confident about the treatment plan and decision, they can opt for second choice.

In one case study, a 49 years old lady got cancer reoccurrence after 20 years. She has gone through surgery, radiation and 18 round of chemo therapy. Again, she got tumor in same side. So, what can we assume from this study? Why didn't it get recover completely, when she followed the complete conventional treatment protocol?

In another case study, a 72 years old man diagnosed with oral cancer. He had tongue cancer and followed complete conventional treatment like surgery,

radiation and chemo therapy. After 5 years, his cancer shifted to neck part and he diagnosed with throat cancer. What was wrong with his treatment and why didn't he get cure in first time and it reoccurred in more aggressive way?

In another case study, 60 years old lady was diagnosed with tumor in ovary. She has been asked to perform surgery. However, she delayed for 1 year and she ended up with 1st stage ovarian cancer. She had gone through surgery, chemo and radiation. Her oncologist has informed her that she got cured. She didn't do any follow up within 6 months also. After 1 year, cancer was back and it was 4th stage. Her urinal and anal passage pathway became the same and waste leakage happened through urinal way. She performed surgery to separate the pathway. Though it was successful, she couldn't bear the treatment outcome. Her weakened immune system couldn't tolerate so much over burden and after 3 months of surgery, she caught her last flight.

Now the question arises, why does cancer re-occurrence happen? When they have gone through complete cancer treatment procedure, why didn't it cure? Why it is so uncertain that it may come back at any time? We will analyze and discuss it here.

Root cause of cancer in a glance

Cancer is not a foreign particle. It is like normal cell in our body. When proto-oncogene doesn't follow the normal rule of apoptosis (programmed cell death), it becomes oncogene. Again, the question is what could

be the cancer is and how does it look like? It is nothing but solid or fluid filled mass or lump or overgrowth of cell. When we tell, we are battling with cancer, in origin it's a malignant (hard) tumor. So how does this tumor forms? When the body cell fails to do apoptosis, it proliferates and replicates in a faster way. What triggers to form a malignant tumor? There are so many causes for cell proliferation. We will do a small recap here to reconnect the topic in a clear way.

Genetic mutation

5-10% cancer cases are because of genetic mutations. If someone has cancer history running in 1st line relatives like mother, father, siblings or maternal uncle and aunt, paternal uncle and aunt, children from this family may get cancer. It is because of genetic mutation getting fueled by other external factors such as environmental factors and internal factors. In my clinical experience, 52 years old lady has been diagnosed with thyroid papillary carcinoma. Her mother had triple negative breast cancer and cousin has lung cancer. It appears that cancer is running in her family. In this case, chances are there that there might have mutation in PTEN gene (Cowden syndrome), TP53 gene, BRCA1 or BRCA2 and HER2 gene mutation. Mostly if mother has breast cancer, children may get breast cancer in future. How to calculate this? The age mother has diagnosed with breast cancer, exactly after 15-17 years, daughter may get breast cancer. Suppose, mother was diagnosed at 45 years, daughter or son may diagnose exactly at 45+ (15 or 17 years later). i.e., 60-62 years. Moreover, this patient has chances to develop endometrial or cervical cancer, if she doesn't take care of her fibroids in uterine and papilloma virus infection. She has frequent viral infection and UTI issues.

In another case study, mother passed away because of ovarian cancer. Her uncle passed away because of prostate cancer. She was ignoring her thyroid nodule for past 10 years. She was diagnosed with metastatic lung cancer. Her thyroid cancer has spread to liver, lungs, spleen and all over body. She ignored the thyroid nodule and exactly after 10 years, diagnosed with metastasis lung cancer. Her thyroid cancer has spread to all over body.

Environmental factors

How environment is responsible to develop cancer? Have we ever heard about our ancestors developing cancer? Answer is very simple, a big no. They were staying connected with nature and get exposure to

Sun and fresh air. They might not have received the benefit of advanced science and technology. However, we got all these opportunities and made our life more mechanical. Industrial chemicals, radiation, air pollution, water pollutions- all are fueling agents to do DNA damage and cell proliferation. It has been observed that people, who are dealing with harsh chemicals, develop lung cancer even though they do not have any family case history of cancer. Too much use of mobile also may cause cellular damage and nerve problem. Unprotected UV ray is also responsible for skin cancer.

Stress

Stress plays vital role in developing not only cancer, almost all diseases. Now the question is how stress hunts diseases or cause cancer? When we are in stress, adrenal gland releases hormone called cortisol. It is located on the top of both kidneys (outer layer of the gland with the Zona fasciculata). How much cortisol would be produced depends upon the conjoining command of Hypothalamus and Pituitary gland in the brain. Together it forms HPA axis, which controls how body will response during stress+ metabolism+ inflammation. In my clinical experience, I have observed that people with high stress level develops thyroid nodule, uterine fibroid, cyst and abnormal cell growth. Cancer is nothing but a malignant solid or fluid filled tumor. How is stress connected with cancer? Cancer thrives in 3 fuels:

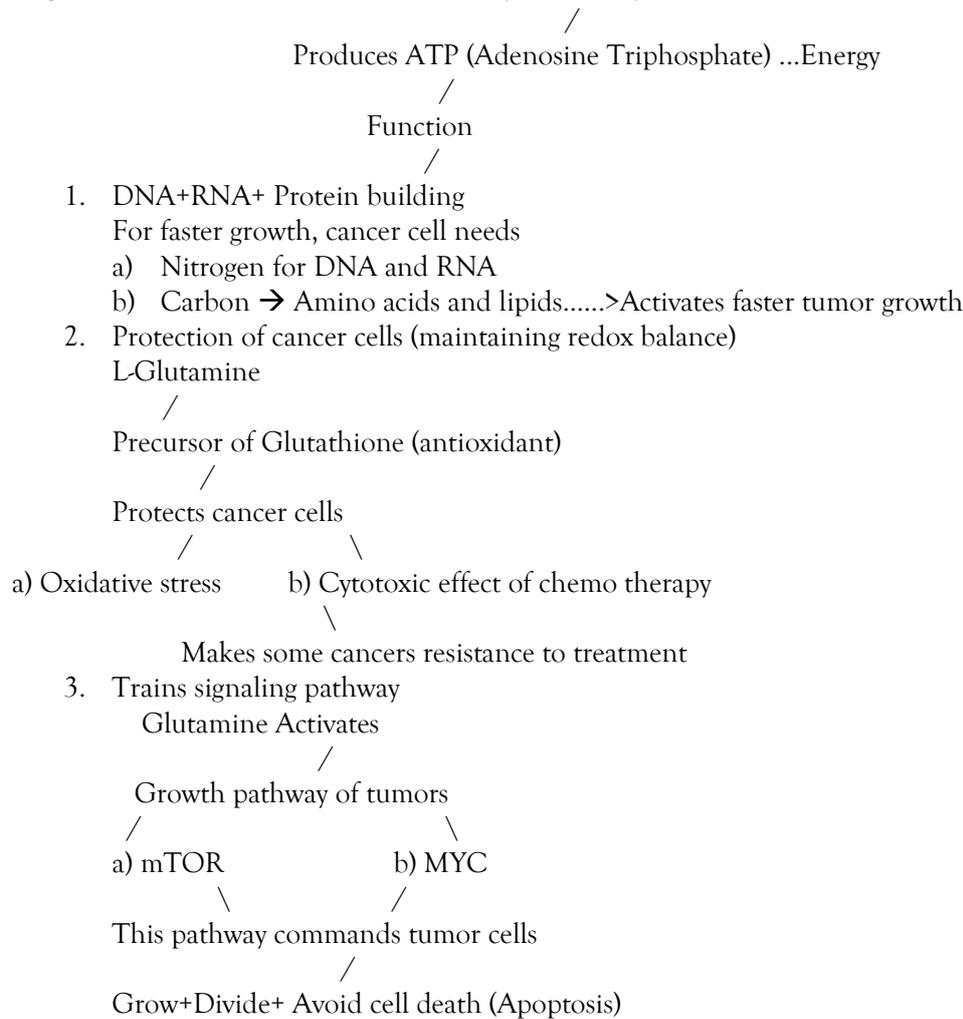
Sugar: It is available in all carbs, refined sugar, honey, fruits, soft drinks and almost all foods except pure protein like meat, egg and fat like oil, butter. However, few proteins or fat may have added sugar like protein bar or sauces.

Glutamine: Glutamine is the essential amino acid in our blood cell. It supports our immunity by fueling white blood cells. It helps muscle break down and recovery. It maintains acid balance in body. It is important for all kind of cell growth and repair. Our body produces it normally. However, during stress, illness, infection, surgery, cancer or intense exercise, our body needs it more than it produces.

Normal cells utilize appropriate glutamine that body produces. Cancer cells are faster growing cells. They need more glutamine to utilize for replication. When we cut the first line food connection glucose for cancer cell, it has glutamine dependency. We will cite here how glutamine fuels cancer cells:

Cancer cell (Inside)...

Glutamine → glutamate → enters the TCA (Tricarboxylic Acid Cycle)



So, we can observe from above model that how cancer cells exploits glutamine to make energy, build DNA, protect them and grow faster. Nobel Prize winner, German Biologist and Physiologist, Otto Heinrich Warburg explained how cancer cells switch to glycolysis to survive. According to him, mitochondrial respiration is damaged in cancer cells.

Normal cell....

i) use glycolysis when they need+ if the oxygen is present

Glycolysis → Pyruvate → TCA cycle + Oxidative Phosphorylation
Efficient ATP Production

ii) If oxygen is absent

Switch to anaerobic glycolysis (Pyruvate → Lactate)

Efficient Glycolysis is regulated

Main goal is to produce maximum ATP production

However, reverse things happen in cancer cells

They utilize Glycolysis if oxygen is present also.

Pyruvate.....> Lactate

This is called aerobic glycolysis.

The rate of glycolysis is high.

Rapid growth and biomass production is the goal, not efficiency

Warburg refers that anaerobic glycolysis can happen to both normal cell and cancer cells. However, aerobic glycolysis is main characteristics of cancer cells. Though, his theory was partially accepted.

i) Fatty acid: Let's discuss first what is fatty acid? Fatty acids are the small units that connect together to form lipids (fats).

Fats.....> made of fatty acids

No fat → No fatty acids

Fatty acids are synthesized to form

- /
- a) Triglycerides (ruling energy storage form)
Fatty acids clubs together with Glycerol
- b) Phospholipids
 Module of cell membrane
 Fatty acid + Glycerol + Phosphate

c) Glycolipids

Crucial for nerve tissues

d) Cholesterol Esters.....Free cholesterol

/ \
 Storage + Transport Form utilized immediately in cell membrane

Both normal cell and cancer cell use

How

/ \
 Normal cell Cancer cell
 / \
 Cholesterol Esters Cholesterol Esters

/
 Stores extra cholesterol
 lipid for balancing internal
 parameters in membrane

\
 Seize this pathway by elevating expression of ACAT1
 to accrete cholesterol esters as primed supply for
 stimulating faster growth, for enduring in harsh
 Condition, metastasis.

e) Signaling lipids:

Lipid or cholesterol-based molecule

/
 Behaves as

\
 Chemical messenger

\
 Motto

\
 Synchronize cell connections + inflammation + growth + existence

- a. Prostaglandin (manages blood flow, inflammation)
- b. Leukotrienes (causes mucus, asthma, inflammation)

Types of Fatty Acids:

/
 1. Saturated Fatty Acid

/ \
 Double bond hard in room temperature
 / \
 Example

- i) Ghee
- ii) Cheese
- iii) Palm oil

2. Unsaturated Fatty Acid

/ \
 Healthy dietary fat
 Liquid at room temperature
 Contains one or more double bond
 Examples

- i) Groundnut oil

ii) Olive oil

Unsaturated Fatty Acid

/ \

i) Monosaturate (MUFA) 2 carbon atoms share a pair of electrons

Canola oil

ii) Polyunsaturated

Multiple pair of carbons shares electrons

Sunflower oil

Essential fatty acids: We might have heard about Omega 3-6. These are essential fatty acids. Our body cannot produce them. However, we should get it from diet or supplements.

How normal cell and cancer cell uses fatty acid?

i) For energy production purpose: Normal cells use fatty use only when they need energy, whereas cancer cells go beyond that. Cancer cells are fastest growing cell and so they need continuous energy. They actively involved for boosting fatty acid oxidation for constant energy.

ii) Normal cell vs. cancer cells taking part in fatty acid synthesis: Normal cells depend on lipid based on dietary fat and use fatty acid (FA) synthesis to store energy for special metabolic purpose like lactation. A Cancer cell does more than this. They reschedule their metabolism to vigorously stimulate de novo FA synthesis. They use this synthesis to generate membranes, constant energy needed for replication, signal pathway for molecules and metastasis.

iii) Preservation and assimilation: Normal cell utilizes sufficient amount of fatty acid and store extra for future use. Cancer cells uses twice than normal cells and assimilate it to support faster tumor growth.

iv) Fatty acid utilization purpose for both normal and cancer cells: Normal cells use fatty acid for energy production, maintenance and balance homeostasis of cell function. Cancer cells use it for various purposes like cell membrane formation, signaling molecules, survive and spread cancer cells from its origins to different organs, called as metastasis.

Visceral Fat: There are two kinds of belly fats-a) Subcutaneous and b) Visceral belly fat.

Subcutaneous belly fat: it is tender, visible and pinch able. It is available under the skin. It is necessary for us to produce energy reservation, protects us from hit and cold, protects muscles and bones from injury. This kind of fats is found around hips, thighs, upper arm. These are not harmful fat.

Visceral fat: Visceral fat is another kind of active fat stored inside abdomen cavity where other important organs like liver, intestine, pancreas are located. It

elevates fatty acid amount and releases it into blood stream. It is very much useful for cancer cells marker. It promotes rapid tumor growth and maintains internal environment for tumor replication. Thus, visceral fat helps in cancer growth and spread all over body.

Vitamin D inadequacy: In my clinical experience I have observed that almost all cancer patients are either Vitamin D deficient or insufficient. Vitamin D is not only considered as fat-soluble vitamin; it is also a hormone which plays major role in metabolism. Recent Cancer research proposes that cancer is not a genetic disease, it is a metabolic disease. And many renowned Cancer researcher and Scientists like Dr. William Li, US Nutritionist Dr. Berg, Prof Thomas N. Seyfried and many scientists and researchers have accepted it, though the genetic factor is also involved with it. However, people with vitamin D deficiency are found with abnormal cell growth. So, in most of the cases like cyst, nodule, fibroid, tumor, vitamin D deficiency or insufficiency is prominent. It works wonder with boosting vitamin D serum level. Higher the Vitamin D serum level, lower the inflammation and stronger the immune system is. 9 years old boy met an accident and developed scar in his left arm. He was vitamin D deficient and issue with vitiligo. I administered a slightly higher dose of vitamin D, 1000 IU per day. After 3 months, when I checked the scar, it was in healing mode and reduced in size. I prescribe a high dose Vitamin D for all of my cancer patients (20,000 IU per day) for a short period of time and continue until the serum vitamin D level reaches 95 ng/mL. It enhances energy level, shrinks tumor size and stimulates other parameters as well like inflammation reduction, stabilize mood, and reduce brain fog. I maintain a combination of Vitamin D3+K2+calcium+magnesium glycinate, and zinc. To build cell membrane and use it for energy source. It also produces chemicals and hormones, which are strong inflammation.

Insulin resistance

As we saw how sugar fuels cancer cells along with glutamine and fatty acid, we can claim insulin resistance is one of the most important factors of developing cancer. Insulin resistance for a long period of time weakens metabolic system. Weak immune system cannot handle more burdens.

High insulin→role plays of growth hormone→activates pathway→PI3K-AKT-mTOR→accelerate...> cell proliferation+ antagonize apoptosis

High blood glucose...uninterrupted fuel for tumor growth

Insulin resistance→enhances...>IGF-1 activity.....>advanced procedure to stimulate tumor growth

High blood sugar...>chronic inflammation+ oxidative stress.....>damage DNA+ support cancer growth+ survival.

Dehydration

Every day we should drink 3-4 Lt Water. It is because 75% of our body is filled with water. Daily our body flushes near about 3 Lt Water through excretion like sweating, renal or anal pathway. So, what happens when we drink less water, our body cell cannot work properly. Lower the water intake; it harms internal organs like liver, kidney, brain. Body cannot flush out toxins and as a result metabolic wastes and carcinogens starts accumulating in different parts of body, joints, in lymph nodes. Dehydration gradually increases cortisol and other inflammatory markers, which enhances DNA damage and tumor progression. It has negative effect on lymphatic system, which slows down immune cell movement, interrupt the body's ability to detect and destroy abnormal cells. Again, dehydration means less blood circulation in cells. We might have observed, if we drink daily 3 Lt Water and one day just drop to 1Lt water, very next day our body gives signal. We develop tiny acne like bump in your skin. Again, without doing anything, it goes away when we start drinking 3-4 Lt Water. What would happen, if we daily have less water intake like hardly 1 Lt? Persistent toxin builds up leads to cell proliferation and abnormal cell growth. I have observed, most of my cancer patients drink hardly 1Lt water. Even more surprising observation is that they develop high uric acid. I use 56 questions case study booklet for assessment of mental and physical status of all kind of patients. I observed, people who complain about uric acid, they put tick mark on daily water intake less than 1 Lt

water. It comes as high uric acid in full body assessment blood work.

Hypoxia

It is a condition, where cells, tissues or the whole body receives less oxygen than the required to produce energy. Why do we need oxygen? Mitochondria are the power house of cell. It requires oxygen to produce energy (ATP).

Low oxygen....>cell shifts...> from...>efficient aerobic respiration to anaerobic inefficient metabolism (glycolysis). When hypoxia continues for long time leads to oxidative stress, inflammation, and acidity and DNA damage. It hinders cancer fighting T-cells and NK cells, which makes a favorable environment for cancer cells to hide from immune surveillance.

Chronic inflammation

Chronic inflammation makes a favorable condition for cancer growth.

Inflammatory cell...>releases...>ROS+RNS (free radicals)->damage DNA...>increase mutation risk

Inflammation fuels angiogenesis process with cytokines like TNF- α , IL-6, and NF- κ B, which stimulate tumor cell survival and uncontrolled growth.

Sedentary life style

People with sedentary life style are more prone to develop cancer. Low physical activity, always sitting, leads to metabolism related disorder, hormonal disorder, hypoxia, insulin resistance, visceral fat accumulation and many more. These are favorable condition for steady cancer growth and DNA damage. We might have observed almost all cancer patients have low hemoglobin. Low hemoglobin carries less oxygen(hypoxia) and stimulates the cell proliferation.

Microplastic

Micro plastics are nano sized particles found in food, water, air, in blood tissues, brain and everywhere. It causes inflammation, oxidative stress and DNA damage, blocks hormones and vulnerable to develop hormone related cancers, weaken immune system and assist abnormal cell growth.

Parasite infection

Parasite infection doesn't cause direct cancer. However, long standing parasite inflammation may cause immune system weak, nausea, vomiting, DNA damage and abnormal cell growth. It releases toxin that may cause oxidative stress and promote fibrosis, which may promote carcinogens. Mostly we may get

stomach ulcer, bladder cancer, and bile duct cancers by inflammation caused by parasite.

Dysbiosis in gut micro biome

Trillions of micro-organisms like virus, bacteria, fungi live in our digestive tract, especially in colon. Imbalance in gut micro biome is called dysbiosis. When we have less good micro biome, it pampers to over grow harmful bacteria and pathogens. It causes inflammation and weakens immune system. Leaky gut and systematic inflammation lead to secondary bile acid secretion, which fuel directly to epithelial cell.

Treatment procedure

Cancer treatment is administered by standard cancer protocol along with surgery +Chemo+ radiation, targeted therapy, immuno therapy, ablation for few thyroids cancer cases. And many advanced cancer treatments have been introduced. Sometimes people may seek advice in holistic care along with cancer treatment. Sometimes they take standalone alternative treatment like naturopathy, Ayurveda, Siddha, Homeopathy, Unani and so on.

Precision Oncology is the new advanced cancer treatment introduced in cancer oncology field. According to the precision oncology guideline, not all cancer patients are unique. So, the two different cancer patients with same cancer may have different etiology. Now what could be the situation to handle this issue? Precision oncology works effectively in this scenario. It is completely patient's immune centric and gives accuracy in mapping up the tumor environment with genomics and big data. Well, not all cancer patients are candidate of surgery, chemo, radiation or even Immunotherapy.

Few might have cold and few might have hot tumors. So, we have to make the cold tumors as hot tumors and reduce the tumor size with simple invasive injection. When the tumor size has reduced and become hot tumor, we should train immune system to detect it and destroy it, instead doing with radiation and chemo. Cold tumors are those tumors, which have few immune cells inside the tumor. It is more aggressive and poor response towards immunotherapy. Pancreatic cancer, ovarian cancer and prostate cancers are examples of cold tumor.

On the other hand, a hot tumor is that is active immunologically. High level of infiltrations of immune cells specially CD8+T-cells...>high inflammation... often PD-L1 positive.... tumor antigens are recognizable.... better blood supply +high oxygen

From the definition, we can guess, it will respond well with immunotherapy like (PD-1, PD-L1, and CTLA-4). We are familiar that melanoma, lung cancer and some colorectal cancers have pretty good prognosis and this may be counted as one factor.

Precision Oncology pointed out that, when we use high dose chemo, it kills cancer cells along with Cancer supportive T-cells, which makes immune system weak and the treatment procedure more devastating. Result is inflammation exactly after 1-2 weeks after performing chemo. UTI is the common thing among all cancer patients, who has gone through chemo or radiation therapy. What will happen, if we do the same chemo with low dose, it goes in the area where the tumor is located and at the same time, it saves from harming normal cells?

Precision Oncology is very much effective for metastatic Cancer patients. Continuous research is going on in this Field. Renowned scientist and Precision oncologist Dr. Dino Patro and his team have been working for 25 years and found that precision oncology is target based and one step ahead advanced than general oncology. It maps out individual biology and does treatment with this road map. However, it is not available everywhere. Only few countries have these facilities.

Cancer treatment is basically an integrated medical system. It has a team of medical oncologist, who treats with medicine, surgical oncologist, who perform surgery, radiation oncologist, who performs radiation. Along with this onco-nutritionist, onco-psychologist, physical instructor for rehabilitation, care taker, nurse is mandatory.

Cancer Diet and its importance

Well, there is no particular cancer diet. It is for everyone. However, cancer survivor must listen to their onco-nutritionist, who can personalize a diet plan depending on individual pathology. Why does it matter so much? In certain cases, few things are mandatory for everyone. Only few things vary and we must concentrate on it. Even two same cancer patients will net get same kind of food or diet preference. Suppose 2 colon cancer patients- one has high blood sugar and another one has uric acid, of course diet will differ.

Here is a universally acceptable proven cancer diet for everyone.

1. All kind of vegetables (mandatory to take anyone cruciferace vegetable like cabbage, broccoli, cauliflower every day. Purpote Potatoes, purple cabbage, green banana, moringa and so on. Green

leafy veg need to be included to feed gut micro biome and maintain eco-system healthier and get long standing positive impact in overall health.

2. Kiwi, Pomegranate, blueberry, sour soup, guava, pear and all kind of fruits in moderate level to get maximum benefit of available anti-oxidants to neutralize oxidative stress and free radicals.
3. All kinds of nuts and seeds like walnut, cashew, almond, brazilnut and seeds like chia seed, flax seed, pumpkin seed, and sunflower seed and so on.
4. Brevages like green tea, Matcha tea, black coffee, black tea, chamomile tea.
5. Coconut water, lemon water with 1 pinch of baking soda, sea buckthorn powder with 1 glass water ad mix 1 spoon apple cider vinegar.
6. Daily 1 type of mushrooms with medicinal properties like reishi, lion's, mane, chaga, shitake, turkey tail. Mushroom is fully loaded with vitamins (b12, B complex, D), minerals like (potassium, copper), protein and fiber, polyphenols like flavonoid, catechin, and myricetin.
7. Kitchen herbs like onion, garlic, ginger, curcumin, black pepper, cylon-cinnamon, basal leaf, neem leaf, curry leaf should be included. It should be part of our daily life to boost immune system and fight against inflammation.
8. Vitamin C should be included in our daily diet with fruits and vegetables.
9. Vitamins and minerals should be taken to maintain balance and strengthen immune system.
10. After chemo, we must consult with our oncologist and have diet according to her guidance. Sometimes healthy food may not be good and suitable after chemo therapy.

What shouldn't we do during cancer treatment or even after cancer treatment?

Sugary items, packed and process food, oily food, junk food, outside food, avoid food color. We should avoid heating food in plastic stuff and drinking water in plastic bottles. We shouldn't eat too much burnt and fired food, because carcinogens like polycyclic aromatic hydro carbons, heterocyclic amines, acrylamide may damage our DNA. Even, if possible, we should avoid high fragrance perfumes, cosmetic stuff, and hair color. Regarding this context, we might have seen celebrities get cancer even after maintaining healthy diet and life style. It may be genetic, environment or may be one of these factors.

Why cancer treatment fails or re-occurrence happens?

We are battling with cancer, not with any medical system. Cancer treatment is always an integrated procedure. In conventional treatment, whole oncology team will plan and design the treatment plan along with biopsy, surgery, chemo and radiation, as 1st line cancer treatment. After then monthly flow up or follow up after 3 months or 6 months. When we are going through standard cancer protocol, cancer should get cure in one go? However, real scenario is totally different. Even after going through whole procedure, cancer comes back within a year or within 5 years. And sometimes it is so pathetic, it comes back in same place or in more aggressive way and again we have to go through the same procedure. Here we will point out few important things that will explain why cancer comes back:

1. We are performing surgery, chemo and radiation to kill cancer. We do surgical removal of malignant tumor and then try to destroy it with chemo and radiation. How much successful is this procedure? Does it really kill cancer cells? Why does tumor come back? We will try to cite it with easy example. When we cut a big tree, we cut it with proper planning. However, after few weeks, we might have seen few new plants are growing from that place. What could be the reason? Did we look for all the roots of the tree, before we cut it? Of course not, and it is not possible also. How did those plants grow back? It is from stem cell of the tree, it grew back. Lizard's regrowth of trail also follows same stem cell formula. Same formula applies in cancer treatment. After chemo, surgery, radiation, cancer comes back with stem cell regeneration technique. Did any oncologist explain to their patient about angiogenesis process of cancer, how it supplies blood vessels to tumor cells? Nobody has so much time, neither the oncologist, nor the patient.
2. We know from cancer metabolism analysis that three main things that fuels cancer are 1) sugar 2) Glutamine 3) Fatty acid. After cancer treatment or during treatment, did we follow this cancer metabolism protocol properly? Of course, not and we can see the reflection of it in cancer treatment. Did any oncologist inform patient about the diet and what to do or what not to do? Most of the cases, oncologists might not have informed about precautions to take as a cancer survivor. And in 50% cases, patients might not have listened to

oncologists. This is common tendency of human nature. After treatment when patients ask, what should they eat, common replies come from oncologist...eat whatever you like. Their motto is to see patient not losing weight and doesn't matter how they gain weight. On a reverse side, after going through all this chemo, radiation, when patients feel nausea, vomiting...they feel good with ice cream, cake, chips. Moreover, they were granted to take whatever they wish. So, after finishing the cancer treatment, again they started fueling the tumor cells and designed the grand come back. Most of the cases, not all oncologists are aware of recent metabolic theory of cancer.

3. We observed that vitamin D inadequacy plays vital role in abnormal cell growth. Again, it does wonder with boosting serum level of vitamin D. Almost all cancer patients are diagnosed with vitamin D deficiency or insufficiency. Did we address this vitamin D inadequacy in cancer treatment? Maybe we are not aware of this fact or doesn't matter whether vitamin D serum level is adequate or not.
4. Have we noticed that almost all cancer patients are diagnosed with grade 1 or Grade 2 fatty liver? It is because, cancer is a metabolic disease. Did we try to figure it out? When the root cause is still present, just doing surgery, chemo or radiation is not going to fix the issue. This is the reason cancer patient always feels nausea, vomiting, full even without eating anything.
5. One most important symptom of cancer patient is low hemoglobin and low iron level or low B12 level. What happens when we have anemia? Low oxygen in blood cell and hypoxia is a favorable condition for tumor growth. If we did not address the issue, how did we address the cancer? Just doing surgery, chemo and radiation will not fix the issue. Every oncologist should have knowledge about oncology and recent research about oncology and how to work on it to get better outcome in cancer treatment.
6. We might have heard about body pain and rotten smell from cancer patients. When most of the cancer patients are deficient in calcium, vitamin D and few have uric acid issue. It causes all these symptoms. Did we address any of these issues? Have we ever tried to address all the issues? In one case study, 45 years old lady was diagnosed with breast cancer. When she has visited to her dentist, before her cancer treatment, they found two teeth

were infected badly with root canal therapy. They removed those two teeth and it helped her in speedy recovery of cancer treatment.

7. Dehydration plays important role in cancer treatment. We must maintain proper hydration. Most of the patients do not drink sufficient amount of water. Toxin build up causes more inflammation. Inflammation fuels favorable environment for tumor to regrow. Moreover, inflammation also leads to infection.
8. After cancer treatment, no rehabilitation system is there. Cancer treatment fails, when we do not do any physical exercise like walking, jogging, light free hand exercise or meditation. Cancer has bad mitochondria. Cancer loves lethargic and sedentary lifestyle. When we do not do any physical activity, no use of cancer treatment. Without physical activity, cancer treatment is like sending invitation for regrowth of abnormal cells.
9. When cancer cells learn different techniques and hack the metabolism system, it shows chemo resistance. After performing chemo and radiation also, cancer cells do not die. They just suppress for some time. We feel that we have figured it out and even PET CT scan also fails to detect it. Cancer comes back even more aggressive way and ends up with metastasis.
10. Patients fail to do regular follow up after cancer treatment, which is mandatory to design the outcome of cancer treatment. Most of the cases, even they do not finish complete treatment and leave the treatment half of the way. As a result, when body was in adjustment and healing mode, falls down again and tumor size increases drastically. Patients do not listen to oncologist and trust outsiders and get motivated. They shift from one oncologist to another and this is also another big factor of cancer treatment failure.

How to make Cancer treatment fruitful and recover in first go?

In recent era, definition of cancer has been changed. It is no more an only gene dependent disease. It has multifactor and we can have control on it. Cancer is a pretty much life change disease. It has so many factors. We do not know which factor is responsible for development of cancer. However, we can have control on it. Human being has so much ability to command their mind-body and brain.

We came to know that cancer has different metabolism than normal cells. So, we should utilize all these techniques together to figure out and make

the cancer treatment successful. We will jot down factors to make the cancer treatment fruitful:

1. We are not against conventional cancer treatment, though it has few side effects. We cannot tell that; we do not need conventional treatment. When the tumor size is too huge like 10 cm or more than this, we really need surgery. We cannot tell that, we will cure with naturopathy, homeopathy or Ayurveda. Though in certain cases, few have shrunk it natural way with medication, exercise and diet. However, physical exercise plays vital role and it activates sluggish mitochondria. So, we must do regular exercise to make cancer treatment fruitful. There must be consistency depending on the caliber of the patient. I have observed in my clinical experience, people who have done exercise seriously during cancer treatment and after treatment, they are living a healthy life.
2. Diet plays significant role in cancer treatment. Foods are not just for our taste; it has the ability to kill cancer cells. We can question it as, have we ever tried to eat healthy food? Most of the time, our plate is full of processed and junk food. If we change our life style during treatment and maintain the same, we can expect a better outcome. We can follow ketosis diet to balance glucose, glutamine and fatty acid which has been manipulated by cancer cells. However, sometimes cancer cell can hijack ketosis also. So, we must plan according to this. Fasting and intermittent fasting should be understood properly to activate autophagy-mitophagy pathway. It activates our immune system and makes the cancer cells to commit suicide (apoptosis).
3. Vitamin D serum level should be monitored and boost up. When the Vitamin D serum level is high, it addresses so many issues. Even it reduces tumor size also. It makes immune system strong. Other vitamins and minerals should be included in diet to awaken immune system. High vitamin C through food is very much beneficial to fight against infection.
4. Hydration and breathing exercise is mandatory. Proper hydration clears up toxins and makes the body fresh. It can flush out stored micro plastics and toxins. Breathing exercise keeps O₂ level high and supplies proper oxygen to cells. Because hypoxia or low oxygen is the favorable condition to grow cancer cells. Most of the metastasis cancer patients struggle with hypoxia. So, if we do

breathe exercise, we can control it and live a healthy life.

5. We must take care of gut micro biome. Dysbiosis leads to overgrowth of harmful bacteria and pathogens enter in blood stream. We must eat healthy fiber rich food to nurture good micro biome. French Oncologist and immuno therapist Dr. Lawrence Zigvetol observed that patients who were giving response towards immuno therapy, had good number of bacteria called akkermensia municipihila. We can grow it in our gut by taking pomegranate, cranberry. It has control over metabolism and it influences diabetes and obesity. We can take it as supplement also to get maximum benefit. Urolithin A is the natural compound, produced in our gut, when we eat pomegranate, strawberry, walnut and polyphenol like elagitannis and elegiac acid in it, come in contact with Gordonibacter urolethinfaciens and breakdown polyphenols and produce it. However, not everyone can produce Urolithin A. So they can have it in supplemental form. It energizes mitochondria, the power house of cell.
6. Daily exercise, walk, jogging, meditation is mandatory to make immune system strong. Meditation controls stress hormone cortisol and boosts melatonin. We can have proper sleep and our body goes to repair mood.
7. We should address each and every issue of body. Cancer treatment doesn't mean only surgery, chemo and radiation. When we check internal environment and handle it properly, it will address the cancer growth factors and deactivate the blood vessel supply to tumor cells. Grade 1 or grade 2 fatty livers should be addressed. We should increase hemoglobin level by manipulating iron profile or b12. Inflammation markers should be checked regular basis.
8. We can do different things to strengthen immune system. We should go for best option for each and every patient. When precision oncology is able to do the same thing, we can opt for low dose chemo. It will directly address the tumor cells and save normal cells from serious injury.

In recent era, cancer is no more a single disease with single genetic foundation. We have a hot discussion about cancer etiology in depth and we pointed out why does cancer treatment fail? It answers about our query why Cancer is a chronic disease? Latest cancer research is suggesting that cancer is a metabolic disease. However, we cannot neglect other factors

also. Life style change, gut micro biome, hypoxia, stress, inflammation, vitamin D, genetic, environmental-all these factors should be addressed to map out the exact cause of cancer. Someone may develop due to genetic back ground and another person may develop due to stress. Despite being primary factor of cancer, we must address the secondary factors as well. Physical exercise and active status of health does matter. Whatever may be the cancer treatment like conventional, holistic, naturopathy -we must include Physical exercise+ proper diet+ sound sleep +proper hydration+ vitamins and minerals and so on to get better outcome. What I have observed is all the factors behind cancer are inter-connected. Each factor influences another one. Consistency is the main key in cancer treatment. We must listen to oncologist and stop changing one oncologist to another. We should be able to finish the complete cancer treatment with proper guideline. It saves us from harsh side effect of chemo and radiation. If we stay strong and listen to our body, we can make cancer treatment successful in one go. Follow up is mandatory part of cancer treatment. We must do regular follow up every year even after cancer recovery. We shouldn't ignore silly things also and address it as soon as possible. If we can do all, I believe we can bid cancer in one go. Even we have successful story of strong cancer survivors, who bid cancer in one go and leading a healthy life. Anyone can get cancer and it doesn't matter. How do we handle and manage it does matter a lot? Strong mind set can make us warrior and return us back from terminal cancer to cancer free. We might have seen how few warriors fought back and returned back to life, when hospital authority left no chance to live and offered limited period of time to be count in. So, we can expect a better life with firm determination and strong will power to live that life at any cost. We can see another side of cancer as psycho-somatic illness as

well. Since it develops from stress (mental state of mind) and triggers our physique or body. Whatever may be the cause, we cannot define cancer as a single factor disease. It is multifactorial complex disease with chronic re-occurrence and this definition describes its etiology in more prominent way.

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