



The Key to Killing Cancer Stem Cells

Your tumor has shrunk after numerous aggressive rounds of chemotherapy. A recent scan indicates the tumor is hardly visible; a cause to celebrate. Remission or NED [No evidence of disease] is added to your chart. Yet within months the cancer is back, found elsewhere and small progression at the original site. So what

happened?

Lurking within that tumor shrunk by the chemotherapy cancer stem cells [CSCs] were waiting for the opportune time to regroup and spread the disease. No amount of chemotherapy would have prevented your recurrence; over dosing of chemotherapy weakens your immune system that would allow the cancer stem cells to regroup faster, not prevent the recurrence.

The bulk of tumors is made up of nearly 99% of non-stem cells, dormant or inactive cells, about 1 percent of those billions of tumor cells are cancer stem cells. These cells are responsible for sustaining the cancer, much like normal stem cells that sustain our organs and body tissue; Cancer Stem Cells reproduce themselves and move to other parts of the body causing metastases. *“Stem cells have three distinctive properties: self renewal (i.e., at cell division, one or both daughter cells retain the same biologic properties as the parent cell), the capability to develop into multiple lineages, and the potential to proliferate extensively.”* * Through research there is data that reveals CSC's may originate from normal stem cells or progenitors that give cause to the possibility that there may be multiple CSC populations formed during the progression of cancer and could co-exist in advanced stages of cancers. Because the Cancer Stem Cells are resistant to chemotherapy and radiation they are able to survive these forms of treatment. Because they do not divide like normal cancer cells, drugs that target dividing cells do not affect Cancer Stem Cells, a reason why they survive vigorous chemotherapy treatments. *“The eradication of bulk disease is not likely to predict the efficacy of drug regimens for rare cancer cells. Therefore, the development of assays that measure the survival of cancer stem cells will be important for assessing the potential of new targeted regimens.”** It is theorized that tumors derived from an early cancer stem cell or its parent cells, the metastases form readily and are phenotypically more heterogeneous. Metastases derived from a later cancer stem cell are more homogenous and have more restricted metastatic potential.

“The idea that cancer is primarily driven by a smaller population of stem cells has important implications. For instance, many new anti-cancer therapies are evaluated based on their ability to shrink tumors, but if the therapies are not killing the cancer stem cells, the tumor will soon grow back (often with a vexing resistance to the previously used therapy). An analogy would be a weeding technique that is evaluated

*based on how low it can chop the weed stalks—but no matter how low the weeds are cut, if the roots aren't taken out, the weeds will just grow back." ***



Each recurrence or each new metastases allows the cancer to become more aggressive; surviving resistant normal cancer cells combined with the Cancer Stem Cells produce resistant aggressive tumors. If the continued aggressive chemotherapy and radiation treatments do not weaken the body to a fatal point, the aggressive progression of metastases will cause death.

[Hear what Dr Jimenez discusses with Ty Bollinger about Cancer Stem Cells](#)

So what can you do to overcome Cancer Stem Cells?

'It has become clear that clearing the body of cancer stem cells will be crucial if effective anti-cancer therapies are to be developed' says Xin Lu ***

In 1906 Dr John Beard, embryologist proposed pancreatic proteolytic digestive enzymes were a major defense against cancer, using certain enzymes a break down of the protective coating protein on cancer stem cells would occur making them susceptible to the immune system to identify them and attack them. The coating on the stem cells when exposed to pancreatic enzymes causes it to become sticky and dissolve allowing the immune system to do its job. Dr Young S. Kim of the National Cancer Institute found in research that numerous natural compounds can kill off CSC or perhaps normalize them. Science shows our DNA which rarely mutates; therefore it is believed stem cells become blocked by proteins and cannot communicate causing them to replicate and create metastases. The science of Epigenetics is finding in light of much new research into drugs that will unblock these CSC from their protein covering, there are natural compounds already known that will have an unblocking effect. These are known as Bioactive Natural Compounds. The use of Bioactive natural compounds can provide the body with compounds having the ability to break-down the sticky protein covering. These include: Vitamin D, Curcumin, Resveratrol, Fish/krill oils (Omega-3), Catechins (EGCG), Conjugated Linoleic Acid, Coenzyme Q10, Indole 3 Carbinol/DIM, Sulphoraphanes, Quercetin, Grape Seed Extract, Modified Citrus Pectin. Anthocyanins (deep purple of beetroot, plums, aubergine), Melatonin, Pomegranate, Soy/Genistein, Lycopene, Pterostilbene, Coffee Diterpine, Apigenin, Silibinin, N-acetylcysteine, Vitamin E, Choline and Piperine. Therapeutic doses in order to achieve the result are needed. Using a variety of the Bioactive natural compounds will help reach that goal.

Although polyphenols in fruit and vegetables may help to reduce the risk of cancer, few protective effects have been firmly established perhaps due to uncontrolled conditions and factors as well as timing of ingestion. If you controlled the intake of the polyphenols the

achievement of breaking down the protein covering could occur. Ellagitannins are polyphenolic antioxidants abundantly found in fruits, seeds, and nuts. The metabolite of ellagitannins: ellagic acid is formed during digestion the ellagic acid when ingested directly is virtually destroyed in the digestive tract; however, when ellagic acid is carried into the digestive tract by ellagitannins, the ellagic acid separates from the ellagitannins and enters the bloodstream in effective amount. Researchers have found that when a variety of cancer cells are exposed to ellagic acid in testing, the ellagic acid disrupts the life cycle of cancer cells through breaking- down the protein covering and helping to prevent proliferation, thus cell death occurs. No harm is done to healthy cells. Ellagic acid is found in plant foods, especially red fruits and some nuts, and specifically in 46 different varieties of fruits and nuts. Ellagitannins are found in, for example, raspberries, blackberries, acai berries, pecans and walnuts. Studies have indicated that the main metabolite of ellagitannins (ellagic acid) is an effective anticancer agent with the potential at preventing cancers of the cervix, colon, prostate; breast, esophagus, and skin have been studied. The Ellagitannin complex is present in relatively high concentrations in red raspberries which is believed to be the most concentrated source of ellagic acid.

So what does this all mean?

When a mutation or damaged cell by way toxic exposure or other cause, embeds itself much like an embryo does in a woman's uterus, a cancerous growth begins to occur. Once established a few of these cells become the Cancer Stem Cells. A protective protein coating keeps mainstream treatments of chemotherapy and radiation from killing them off. No matter how much chemo you pump into the patient the CSC's will continue to progress. They are responsible for the metastases in advanced stages of cancer. If you could kill them, the cancer would begin to resolve. While drugs are beginning to be studied to date there is no known absolute drug that can accomplish this. Meanwhile there are Bioactive Natural Compound but most importantly there are Ellagitannin Complex that are easily dosed in high therapeutic doses that can achieve the break-down of the protective protein allowing the immune system along with targeted treatments to kill off the exposed cancer stem cells. Once the CSCs are killed off normal cancer cells are unable to continue and will be killed off systematically by the same means of treatment.

Jesicha's Hope www.jesichashope.org is an organization that has the expertise to guide and assist you without charge to help offer you options that will enable you to achieve the goal of helping to overcome cancer through effective organic approaches to find the cause, kill the cancer stem cells, build up the immune system, find effective natural treatments and repair the body. Sources for treatment and to overcome the cancer stem cells will be given freely by a staff member of Jesicha's Hope or you may find some sources they approve through Nurturtech, www.nurturtech.com

References:

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*** <http://www.stemcells.ox.ac.uk/cancer-stem-cells>

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