

UNDERSTANDING BREAST CANCER TREATMENTS

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Most breast cancers are estrogen receptor positive with only about 24% of breast cancers being estrogen receptor negative. A breast cancer classified as “estrogen receptor positive” will speed up the rate of its growth if estrogen enters the receptor site of the cancer cell. Prior to 1998 it was thought there was only one estrogen receptor site on breast cells but in 1998 it was discovered that there are actually two receptor sites on breast cells. These are now referred to as “alpha” and “beta” receptor sites.

Estradiol, the most frequently found estrogen in the body, will metabolize to other forms, depending on the diet, which have been referred to as “good” and “bad” estrogens. The “good” estrogen is known as 2-hydroxyestradiol and the “bad” estrogens are known as the “4-hydroxyestradiol and 16-hydroxyestradiol metabolites. The “good” estrogens are protective do not cause cancer. Women with high levels of the “good” estrogen in comparison to the “bad” estrogens are considered to at low risk for developing cancers. A urinary test will allow women to check their ratio of 2-hydroxyestrogens vs the 16-hydroxyestrogens.

With the preceding in mind, the theories of depriving breast cancer receptor sites of estrogen have logically come up with the following strategies:

1. Reduce circulating estrogen levels because this will slow down the cancer growth.
2. Block the estrogen receptor sites with an “estrogen” like compound that does not speed up the breast cancer growth. Simply put, stop the estrogen from getting into the receptor site and you will slow down the growth of the hormonally driven breast cancers.
3. Block the production of estrogen to prevent its presence which in turn will prevent estrogens from entering the receptor sites and speeding up the cancers growth.
4. Promote a higher level of “good” estrogens as compared to the “bad” estrogens to prevent DNA damage in breast tissue and reduce breast cancer risks.

Of course, outside of the estrogen based strategies of breast cancer treatment, there still remains the outright killing of cancer cells with chemotherapy agents, anti-angiogenic agents (shutting off the blood supply to the tumor), and apoptosis inducing agents (restoration of the normal programmed cell death).

Current thinking employs the following products and strategies in the treatment of breast cancers:

1. Tamoxifen

Tamoxifen has been used for 25 years in the treatment of breast cancers. Sales amount to \$1 billion per year, which makes this the leading treatment for

hormonally driven breast cancers. The method of operation is by competing with estrogen for the receptor site. When Tamoxifen binds to the estrogen receptor site it prevents estrogen from entering the receptor site and therefore prevents the cancer cell from speeding up its growth rate.

Note: A study on Tamoxifen's effectiveness showed it to be 26% effective as compared to soy protein isolate being 36% effective. The combined use of soy and Tamoxifen produced an effective rate of 62%.

2. Arimidex

Arimidex is a drug that blocks the production of "aromatase", which is the enzyme that converts androgens to estrogens. The method of operation is based on the fact that if you eliminate the production of estrogen there is no estrogen available for receptor site binding and therefore you will slow down the cancer rate of growth. Women who have used Tamoxifen for five years are currently being switched to Arimidex.

Note: Studies with women who have used for Tamoxifen for at least two years show that by using Arimidex with Tamoxifen, there was a 17% risk reduction in cancer recurrence. Arimidex compared to Tamoxifen produced a 22% reduced risk of cancer recurrence.

Side effects of both Tamoxifen and Arimidex are hot flashes, nausea, decreased energy and weakness, pain, back pain, bone pain, and increased cough. In early breast cancer clinical trials fractures (including fractures of the spine, hip, and wrist) occurred more frequently with Arimidex than with Tamoxifen.(7% vs 5%).

3. Haelan's Nutriceutical, Platinum Formula 951

Haelan's Nutriceutical, Platinum Formula 951 is a concentrated fermented soy beverage with proprietary processing that breaks down the soy phytochemicals and micro-nutrients to smaller molecular sizes makes them more bio-available. It was designed with the intent for use as hospital nutrition and has been sold widely as an adjuvant nutritional product for cancer patients and those suffering from protein calorie malnutrition, which kills 40-80% of cancer patients.

The beneficial mechanisms of action for the breast cancer patient using Haelan's Nutriceutical, Platinum Formula 951 are many. These mechanisms of action include, but are not limited to, the following:

a) Reduces the Circulating Levels of Estrogen

A clinical study performed by Dr. Jane Lu at the University of Texas, at Galveston, showed that healthy women who consume the "whole soy", not isolates of soy, have circulating estrogen levels 30-40% lower than women who don't.

- b) Improves Estrogen Metabolism Ratios (Good vs Bad Estrogens)
A study showed that the whole soy decreased the “bad” 16-hydroxyestrogens 81% thereby increasing the “good” hydroxyestrogens that are protective to DNA and reduce breast cancer proliferation and cancer risks.
- c) Improves Estrogen Receptor Site Blocking
The soy phyto-estrogens have a stronger affinity for the beta estrogen receptor sites than Tamoxifen. A study showed that contrary to the belief that soy reduced the effectiveness of Tamoxifen effectiveness in blocking receptor sites, the soy actually improved the effectiveness of the treatment.

Note: A study on Tamoxifen’s effectiveness showed it to be 26% effective as compared to soy protein isolate being 36% effective. The combined use of soy and Tamoxifen produced an effective rate of 62%. The reason why the combined use of the soy and Tamoxifen produced better results than either one individually lies in the fact that the Tamoxifen has greater binding affinity for the alpha receptor sites than the soy and the soy has a greater affinity for the beta receptor site than the Tamoxifen. So, together a woman would get greater overall receptor site blocking with the use of the soy and Tamoxifen.

- c) Produces Beneficial Metabolites from Soy Isoflavones
Studies show that the soy isoflavones Daidzin and Daidzein, when fermented in the intestines by those with the right gut microflora produce a phytoestrogen called “equol”. Equol has a higher estrogen binding affinity than either Tamoxifen or the other soy phytoestrogens and are considered highly anti-cancer compounds. In addition, Haelan’s fermentation process produces a fermentative metabolite, referred to as MTD-13, that has been shown to be highly anti-cancer in research. When the MTD-13 was isolated and tried in meta-mouse trials there was an 88% tumor shrinkage with human prostate cancer in 40 days and a 66% tumor shrinkage in 40 days trial with human liver cancers. A study at UCLA with the MTD-13 showed it started inducing apoptosis in leukemia cells within two hours.
- d) Anti-Angiogenesis
Naturally occurring anti-cancer compounds in Haelan’s fermented soy beverage shut off the production of enzymes in cancer cells that produce the blood vessel formation that is necessary to support the growth of tumors. By shutting off the blood supply that feeds they shrink because they have no blood supply to feed the cancer cells. This process is known as anti-angiogenesis.

e) Apoptosis

Anti-cancer compounds that are naturally occurring in Haelan's Nutriceutical, Platinum Formula 951 fermented soy beverages restore cell differentiation and induce apoptosis in those cells that are past their programmed cell cycle death period.

f) Shuts down the Nuclear Factor – Kappa Beta (NF-kB) Cancer Cell Survival Mechanism

The naturally occurring soy isoflavones in Haelan's Nutriceutical, Platinum Formula 951 have been shown to shut down the Nuclear Factor- Kappa Beta (NF-kB) survival mechanism that all cancer cells revert to within two hours of being exposed to chemotherapy. A study at the Karmanos Cancer Institute, Wayne State University School of Medicine, found that the chemotherapy agents cisplatin, docetaxel, and adriamycin significantly increased the cancer cell's protective NF-kB pathway activity within two hours of the chemotherapy's administration allowing many of the cancer cells to survive the treatments. Cisplatin, docetaxel, and adriamycin were the chemotherapeutic agents used with the soy isoflavones pretreatment resulting in increased cancer cell growth inhibition and increased apoptosis induced by the chemotherapy drugs on prostate, breast, and pancreatic cancer cells. Cancer cell kill was increased 8-10 times (breast, prostate and pancreatic cancers) when the soy was used as a prior to the use of the chemotherapy agents. Users of Haelan Nutriceutical, Platinum Formula 951 have reported this improved cancer cell kill in addition to being protected from the toxic side effects of the chemotherapy treatments.

g) Slows Down Cancer Cell Growth Rate (Mitosis)

The naturally occurring phytic acid compounds found in Haelan's Nutriceutical, Platinum Formula 951 both delay the onset of cancer and slow down the rate of tumor growth. In a study on breast cancers in rats using the soy derived inositol hexaphosphate the onset of tumor growth was delayed from 10 days to 25 days (250%) and 60% of the animals remained cancer free. The tumor size in those receiving the soy derived compound was 1/25th the size of tumors in the control group. When the test was extended to five weeks 80% of the animals receiving the soy derived compound were cancer free. The size of the tumors in the 20% of the animals receiving the soy derived compound was 1/49th the size of the control group.

h) Immune Stimulation

Haelan's Nutriceutical, Platinum Formula 951 has been shown to increase CD3, CD4 and CD8 cells, improve the ratio of the CD4/CD8 cells, increase the production of beneficial interferons and interleukins, increase the NK killer cell activity, increase the cytotoxic effects of the NK killer cells, and increase non-specific immunity 700% based on macrophage phagocytosis. Cancer