The Cure for Prostate Cancer: Invest Now

(See also TSF survey of breast cancer literature)
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My father, a physician and surgeon, died of prostate cancer when I was twelve, but there is hope for others. The new prostate cancer cure uses a combination of laser technology, non toxic chemical marking, and nanotechnology. Modified laser guided pulses are absorbed differently by cancer cells treated with chemical dye markers, so that they can be differentiated from healthy tissue. Nanites excavate and remove only the prostate cancer cells. Healthy tissue and critical nerves are left intact so there is no danger of incontinence, impotence, or damage to the rectum. All of this is done through a tiny incision. Prostate cancer that has not metastasized can be completely cured, and the cure is in the works for metastasized cancer. Soon we will eliminate the need for chemotherapy for most types of metastasized cancer.

Never heard of it? That is because it has not yet been developed. Meanwhile, we employ crude diagnostics and blunt tools. Hundreds of millions of dollars are spent to push screening, after which men will likely have further expensive tests and potentially unnecessary and risky treatments. Most of our research money is spent on raising awareness so that more men get screened.

Prostate cancer is the most common cancer in men; women do not have a prostate. Trouble urinating may be the first symptom due to a tumor pressing against the urethra. Men are encouraged to get rectal exams that feel for tumors and a prostate specific antigen test or PSA test. Some men may be advised to get genetic testing (see the section on breast cancer below). A PSA score above 2.5 for men in their 40's may indicate prostate cancer; for men in their 70's, a PSA of 6.5 is in the "normal" range. Screening usually picks up prostate cancer in the early stages, so men are confronted with tough choices long before their cancer poses any problems. Often men feel fit and healthy when they are diagnosed. Surgery can leave men incontinent for months or longer. The ability to have an erection and sexual performance may be impaired. The size of the male member after surgery may be smaller—a little discussed side effect— and no one is sure exactly why this occurs. Some men may even have rectal problems. Some of this may be related to the skill of the surgeon, and some of it may be due to "necessary aggressiveness" on the part of the surgeon.

Surgery may supply new information about the nature of the tumor, and there may be a surprise, either good or bad. A T1 tumor may only be picked up by a PSA test, and a T2 tumor may be felt in a rectal exam—both are confined to the prostate and can be "cured," but often with unpleasant side effects such as temporary or permanent incontinence and/or impotence. A T3 tumor has grown just outside the prostate gland, and a T4 tumor has grown into the pelvic area. If it spreads beyond that, it is considered advanced disease. If you have a tumor, you will also be told a Gleason score. A pathologist will examine the two largest areas of cancer in the surgically removed tissue sample, then each is

assigned a 1-5 grade based on how abnormal they appear, and then the two grades are added together. A score of 6 or less is deemed curable by local treatment. Above that, it is considered aggressive and requires rapid treatment. If you are still unsure, you can check with a numerologist for more junk science that sounds sophisticated, but is not.

The standard of care for prostate cancer is expensive, and that is good news for investors in health care. The standard of care is surgery, often followed by radiation. This is known as "cut and burn." After that, men may be advised to take expensive drugs that block testosterone, and this triggers male menopause with hot flashes and other symptoms. That's if they are lucky and their cancer has not metastasized. If it has, ongoing surgery and chemotherapy may be prescribed.

While we may not be spending money for laser and nanotechnology, we are spending a lot of money to raise men's awareness so that they will get screened, potentially get the fright of their lives, and then invest tens of thousands of dollars—perhaps in the end hundreds of thousands of dollars—for ongoing blunt-force treatment once they are "in the system."

Big Business in Breasts

Invasive breast cancer is responsible for 4% of deaths for women over the age of 50. Cardiovascular disease kills 53% of women over the age of 50, but women aren't taught to be as terrified of lack of exercise as they are of skipping a mammogram.

Treatment for the approximately eleven different types of breast cancer is about as advanced as treatment for prostate cancer. Laser and nanotechnology doesn't exist for these cancers, either. Instead, patients—depending on the diagnosis—are told of the need for mammograms, ultrasounds, MRI scans, lumpectomy, mastectomy, radiation, hormone blocking drugs and chemotherapy. "Cut and burn," is the standard of care.

Some of the research for hormone blocking drugs may be false, and side effects such as vision problems and the low probability of an aggressive form of uterine cancer are usually not discussed. The preventative benefits of taking large doses of Vitamin D (to raise blood concentration to 80 ng/mL) may exceed the benefits of drugs like Tamoxifen, but no one knows for sure, because the necessary research has not been done. Who wants to fund research for a cheap pill with no known toxicity, when drug company revenues are at stake?

Women of Jewish heritage or with breast cancer in the family may be told about genetic testing for mutations in the tumor suppressing BRCA1 and BRCA2 genes. The testing is expensive, however, because none of our numerous religious deities took out a patent on our DNA. Incredibly, a patent for this gene was granted to Myriad, which drives up the cost of testing for these hapless females. You can get a genomic medical profile done for around $1,200. But the cost for testing for the BRCA1 and BRCA2 genes alone will cost you around $3,500, and insurance may or may not pay for it. That's the power of a

patent. BRCA2 gene mutation is also implicated in prostate cancer. As the late Michael Crichton MD pointed out, someday you or someone you love may die as a result of patents like this one.

There is no known survey of breast cancer literature, so I did one. You can view or download the results here. My survey covers stage 0 non-invasive ductal carcinoma *in situ* (DCIS) through stage 1 (neighboring tissue is involved with a tumor up to 2 cm in size, but lymph nodes are not involved) and stage 2 (neighboring tissue is involved with tumors larger than 2 cm and/or lymph node involvement) breast cancer.

Screening is far ahead of knowledge about prevention and cure. In 2005, at Chicago's Northwestern hospital, there was more than a 500% increase in women diagnosed with non-invasive non-life threatening ductal carcinoma in situ (DCIS) due to better screening techniques. Non life-threatening DCIS was once considered rare, but it now makes up 20% of all breast cancer diagnoses. It is great that DCIS, which could eventually become invasive breast cancer if left untreated, is caught early. Of course that means that DCIS which would never have become invasive will also be treated, perhaps with a mastectomy. Little has changed in terms of treatment options—except new drugs. This means that many women are over-treated with expensive ultrasounds and various kinds of biopsies, but no one can tell you which women received unnecessary treatment, and which women were saved as the result of treatment. You can be sure that all of it comes at a high cost and huge emotional toll. The anxiety is likely to increase cardiovascular disease, but that is handled by another department.

Many women are doctors, scientists, mathematicians, chemists, and eager highly-educated consumers of medical care. Many women can read and interpret primary research. Yet, summaries such as the one I provided above are not available anywhere else, as far as I know. Breast cancer research designed for patients is infantilizing, and primary medical research is only offered if a patient specifically requests it. Even then, a woman may be better off researching medical literature herself.

Money raised for breast cancer walks chiefly underwrites events and raises awareness—more mammograms, ultrasounds, MRIs, and biopsies—but we are no closer to a cure and certainly no closer to prevention or understanding the causes than we were 25 years ago. Products with pink ribbons are marketed to women, who do most of the shopping, but there too, money is spent raising awareness.

There is no coordinated effort in the U.S. to cure breast cancer.

Yet, my research suggests that more coordinated research is necessary, and some cancers can be cured with good surgical techniques alone. Genuine DCIS is an epithelial cancer, and it can be cured by surgical removal, if all of it is cleanly removed. Dr. Melvin Silverstein, on the west coast, found that tumors less than one centimeter in size that are removed with a one centimeter margin around the tumor had at most a 2.5% chance of recurrence whether or not radiation was subsequently used. This was irrespective of the "grade" of the tumor. Since the milk ducts that house this cancer wind around,

however, the size of the margin and the surgical technique makes a huge difference, since a surgeon may miss some DCIS lurking in a portion of the duct.

Dr. Silverstein found that when clean margins were less than 1 cm, recurrence jumped to as high as 33%, about the same as in other studies where tumor size and margins were not as carefully recorded. Good surgery, not radiation, was the determining factor for a cure.

Two other studies suggested Silverstein is on to something. These studies used lumpectomy only with no further treatment, i.e., no radiation or hormone blocking drugs. These studies didn't get results as good as Siverstein's, but their results were far superior to other studies (including those using lumpectomy plus radiation) with less than half the recurrence rate. But these studies did not use the same technique as Silverstein, and they did not use the special pathology protocols established by Dr. Silverstein.

Given this encouragement of a high cure rate without radiation, one would think Dr. Silverstein's studies would be standardized and studied throughout the United States, but they are not. Many women with DCIS may be either over-treated with mastectomy or mistreated with lumpectomies with insufficient margins followed by radiation. Radiation may have been completely unnecessary for women with tumors less than one centimeter in size, and the outcome is inferior.

The picture is less clear for tumors greater than one centimeter in size. But new screening techniques mean that most new DCIS is caught when it is less than one centimeter in size, and the diagnosis is skyrocketing from previous levels. Yet, only two treatment options are encouraged: mastectomy, or lumpectomy followed by radiation (in case the cells were not totally removed).

Since DCIS is being diagnosed in more women in the early stages, one would think that U.S.-wide studies would standardize surgical procedures and pathology techniques at a minimum. Yet surgeons use various techniques and disagree on the size of margins required for lumpectomies, and patients rely on the skill of a pathologist without asking for a second opinion on the pathology report.

Health Care Investment

In the U.S. it is standard practice to call cancer patients "victims," and my research backs up the use of this terminology. As long as this standard practice is supported by the current standard of care, the best way for investors to prosper is to invest in drug companies and health care providers that cater to this flawed system.

Venture capitalists with a humanitarian outlook may want to invest in promising new technologies with the awareness that a lucrative institutionalized "health care" system will fight innovation. The current "standard of care," is as protected and flawed as our financial regulatory system.

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