Nutrition And Supplementation Benefit Men With Prostate Cancer: Frequently overlooked interventions in the adjunctive management

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Doctors encourage men over 50 (and in cases of relevant family history or African-Americans, beginning at age 40) to have an annual PSA test for early detection of prostate cancer. PSA stands for Prostate Specific Antigen, an enzyme released into the bloodstream at higher concentrations from prostate cells in cases of prostate inflammation, enlargement and prostate cancer. A PSA level above 4 ng/ml is cause for concern with respect to prostate cancer, as is a quickly rising PSA level from one year to the next, even if the level is within the normal range (under 4 ng/ml).

If the PSA level arouses suspicion then a trans-rectal ultrasound is scheduled to look for suspicious masses within the prostate gland. If they are detected then a needle biopsy is preformed and the suspicious tissue is assessed by a pathologist who gives the tissue samples a Gleason Score (from 1-10). The higher the score, the more malignant the cells are determined to be.

The good news is that if the cancer is detected early and is only confined to the prostate gland itself then a surgical procedure (radical prostatectomy) results in a complete cure in most cases. However, if the cancer has extended through the prostate capsule to invade the bladder, the rectum or cells find their way into the lymphatic system, then the prognosis is not as encouraging from the standpoint of long-term survival. Metastasis of prostate cancer often involves invasion into bone and the liver. Thus, catching prostate cancer at an early stage is an important strategy considering that prostate cancer is the second leading cause of cancer death in North American men.

However, in some cases of localized prostate cancer, men refuse to have surgery because they know that they are likely to be left impotent and/or have urinary incontinence (two quality of life issues) from nerve damage related to the surgical procedure. As well, statistics show that in the majority of cases prostate cancer is a slow growing tumor, which is usually not life threatening. Thus, some men opt for “Watchful Waiting” (especially if they have a low Gleason Score and the tumor mass does not look very large upon trans-rectal ultrasound), whereby they have their PSA monitored to see how

fast it is rising. If the PSA is rising very slowly then they will often continue to refuse surgical intervention and/or radiation treatment.

Some doctors also recommend “Watchful Waiting” for men with localized prostate cancer who are at high risk for complications from surgery. These are men who may die on the operation table or are very likely to have life threatening complications even if they survive the surgery. For instance, men with pre-existing cardiovascular disease (e.g. previous heart attack or stroke), uncontrolled diabetes in men who are morbidly obese, and in other circumstances, these men fall into the category of non-surgical candidates.

Diet And Supplementation In The Adjunctive Management Of Prostate Cancer

In recent years a number of clinical trials have been undertaken to see if specific dietary and lifestyle measures and/or nutritional supplements can slow the rise of PSA levels in men with localized prostate cancer, or possibly lower the PSA. Other studies have included men with more advanced disease. A number of epidemiological studies and animal studies had suggested that certain nutrients can defend the prostate against prostate cancer and/or inhibit the growth of existing prostate cancer cells. With this knowledge researchers have begun using some of these nutrients in supplementation trials with men who have various stages of prostate cancer.

Some of these studies have yielded most impressive findings, a review of which follows:

A. Soy Isoflavones – In a an intervention study, involving men with existing prostate cancer, supplementation with 100 mg per day of soy isoflavones showed a favorable outcome in stabilizing PSA levels (M Hussain et al, Nutrition and Cancer, 2003). In this study soy isoflavone supplementation was shown to decrease the rate of rise in serum PSA levels in patients with androgen-dependent and androgen-independent prostate cancer. These researchers concluded that their data suggests that soy isoflavones may benefit some patients with prostate cancer by slowing the progression of the disease and therefore, potentially delaying the development of symptoms, improving quality of life, and perhaps even prolonging survival. (1)

B. Vitamin D - The administration of cholecalciferol (the kind of Vitamin D found in supplements), at physiological doses, has been shown to decrease

or slow the rise in PSA levels in men with prostate cancer in the past number of years, without risk of vitamin D toxicity.

A recent study to investigate the use of vitamin D in the treatment of prostate cancer was published in the journal, Nutrition and Cancer, in 2005, by TCS Woo and fellow researchers (volume 51, number 1). In this study 15 prostate cancer patients were given 2,000 IU (50 ug) of vitamin D daily and monitored prospectively every 2-3 months.

In 9 patients, the PSA level **decreased** or remained unchanged (no further rise) and these results were sustained during the 21-month course of vitamin D administration. Analysis also showed that there was a statistically significant decrease in the rate of PSA rise after administration of vitamin D compared with that before vitamin D administration. The median PSA doubling time increased from 14.3 months prior to vitamin D administration to 25 months after commencing vitamin D. In fact, 14 of the 15 patients showed a prolongation of the PSA doubling time after vitamin D supplementation was introduced to this group. There were no side effects reported by any patient. (2)

The marked prolongation of PSA doubling time is an extremely important outcome to the administration of vitamin D in these patients, according to the recent work of Partin and fellow researchers (J Urol, 2003). Partin and fellow researchers showed that the risk of distal metastasis of prostate cancer (with respect to relapse after prostate cancer surgery) at 5 years was 65% to 75% when PSA doubling time was less than 10 months compared with 10-20% when PSA doubling time was greater than 10 months.(3)

As such, researchers working in this field point out that agents such as vitamin D that lengthen PSA doubling time or decrease the rate of PSA increase, might be clinically useful in the treatment of prostate cancer cases, with respect to affecting (slowing) the clinical course of the disease, and improving survival rates and quality of life, even if they do not reset the PSA levels into the normal range. (2)

C. Lycopene Supplementation - In a Phase II clinical trial (Vaishampayan U et al, 2007) researchers investigated the efficacy of lycopene alone or in combination with soy isoflavones on serum PSA levels in men with prostate cancer. To be eligible for the study, men with prostate cancer had to have rising serum PSA following local therapy or while on hormone therapy. The

study population included 71 patients who had 3 successive rising PSA levels or a minimum PSA of 10 ng/ml at 2 successive evaluations prior to starting therapy.

Subjects were randomly assigned to receive a tomato extract capsule containing 15 mg of lycopene alone (n = 38) or together with a capsule containing 40 mg of a soy isoflavone mixture (n = 33) twice daily orally for a maximum of 6 mo. One patient on the lycopene arm did not receive therapy due to his inability to ingest the study pill.

There was no decline in serum PSA in either group. However, 35 of 37 (95%) patients in the lycopene group and 22 of 33 (67%) patients in the lycopene plus soy isoflavone group achieved stable disease, meaning that they achieved stabilization in serum PSA level. The data suggest that lycopene and soy isoflavones have important adjunctive effects in prostate cancer patients with PSA relapse disease and may delay progression of both hormone-refractory and hormone-sensitive prostate cancer. (4)

D. Antioxidants and Low Animal Fat Diet - In the September 2005 issue of The Journal of Urology, Dr Dean Ornish published a study testing the effectiveness of an intensive dietary and lifestyle program as the sole treatment of prostate cancer in men with low to moderate Gleason Scores. The program consisted of a low animal fat diet (with the exception of some fish), and emphasis on fruits, vegetables, legumes, soy products and other vegetarian foods (and dairy-free). He also supplemented these men with antioxidants (vitamin C, selenium and vitamin E), and included moderate aerobic exercise, and stress management interventions in the treatment group. The daily antioxidant supplement dosages were:
Vitamin C – 2000 mg
Vitamin E – 400 IU
Selenium – 200 mcg

Ornish studied 93 men who had chosen not to undergo conventional surgical or radiation treatment for prostate cancer. Half of these men were randomly allocated to the Ornish program, while the remainder served as a non-treated comparison group. After 12 months, the PSA of the treated group of men **decreased** an average of 0.25 ng/ml or 4%, and the PSA of the non-treated group of men increased an average of 0.38 ng/ml or 6%. (5)

E. Ground Flaxseed – 161 Prostate cancer patients scheduled at least 21 days before prostatectomy were randomly assigned to one of the following arms: (*a*) control (usual diet), (*b*) flaxseed-supplemented diet (30 grams per day), (*c*) low-fat diet (<20% total energy), or (*d*) flaxseed-supplemented, low-fat diet. Blood was drawn at baseline and before surgery. Tumors were assessed for rates of proliferation and programmed cell death (apoptosis). Men followed the protocol an average of 30 days. Results showed that the men given the ground flaxseed supplement (not flaxseed oil) had a slower replication rate of their prostate cancer cells than did men not taking flaxseed supplementation and men using only a low fat diet.

Researcher's Conclusions: "Findings suggest that flaxseed is safe and associated with biological alterations that may be protective for prostate cancer." (6) These findings also suggest that ground flaxseed supplementation may slow the proliferation rate of existing prostate cancer cells in the body.

F. Saw Palmetto and Lycopene (A case report) - A 62-year-old man with androgen-independent metastatic prostate cancer that had failed to respond to multiple treatment regimens stopped all conventional therapy and began takin 10 mg/day of lycopene and 300 mg of saw palmetto 3-times per day. The prostate-specific antigen (PSA) level decreased from 365 ng/ml to 140 ng/ml after 1 month and to dropped to 8.1 ng/ml after 2-months. A repeat bone scan revealed an improvement of bony metastases. He has continued the lycopene and saw palmetto and has remained asymptomatic for an unspecified period of time. (7)

Note – Saw Palmetto contains Beta-sitosterol, which in experimental and animal studies has shown an ability to induce programmed cell death (apoptosis) of certain prostate cancer cell lines. Most researchers attribute the dramatic disease reversal effect in the above case to this biological process.

G. Pomegranate Juice - Two clinical studies have now shown that men with established prostate cancer that was not responsive to standard

medical treatment, realized a marked slowing of their disease when they drank 8 ounces of pure pomegranate juice each day.

Reporting at the 104th Annual Meeting Scientific Meeting of The American Urology Association, researchers presented findings showing that men, who had undergone prostate surgery or radiation treatment for localized prostate cancer, benefited from drinking 8 ounces per day of pomegranate juice if their PSA levels were still continuing to rise.

In other words, in cases where prostate surgery or radiation had not been successful in eradicating all prostate cancer cells in the body, pomegranate juice was able to contain the replication rate of any existing prostate cancer cells that remained. In the men giving the pomegranate juice the doubling time of their PSA was extended to 60 months, compared to only 15.4 months prior to pomegranate juice administration.

Previously, a study in the Journal of Clinical Cancer Research in 2006 showed that men, with established prostate cancer, extended the PSA doubling time from 15 months to 54 months when they began drinking 8 ounces of pomegranate juice each day

In addition to these studies, there is also compelling evidence for the use of other supplements in the management of prostate cancer, including:

1. Modified Citrus Pectin
2. Vitamin E Succinate
3. Essential Fatty Acids (a combination supplement containing fish, flaxseed and borage seed oil)

These have been reviewed in other articles I have written previously

Conclusion

The body of evidence suggests that specific dietary and supplementation practices should be strongly considered in the adjunctive nutritional management of prostate cancer. Many medical doctors and oncologists are not familiar with the studies to support this approach, and thus, in many instances it falls to alternative health care practitioners to educate patients on this subject, including providing patients with research to discuss with their attending physician. This article may serve as a resource tool in this regard.

As a final note, it is also important to help male patients prevent prostate cancer. I have previously published an article outlining the key steps to accomplish this end – one of which is to advise patients over 40 yrs to take a supplement each day containing meaningful doses of the following protective prostate nutrients, as I do, which include:

- Saw Palmetto
- Pygeum Africanum
- Beta-Sitosterol
- Soy Isoflavones
- Stinging Nettle (urtica dioca)
- Pumpkin Seed Extract

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