ADT Medications Can Cause Prostate Cancer Cell Apoptosis

by Charles (Chuck) Maack – Prostate Cancer Advocate/Mentor

Prostate Cancer (PC) cell apoptosis with ADT medications and improved with the addition of 5AR inhibitor dutasteride/Avodart:

I am regularly amazed by the repeated claims that androgen deprivation plays no role in prostate cancer cell apoptosis. As Ralph Valle, a long-time prostate cancer patient, advocate, and mentor, has remarked in the past, depriving cancer cells of androgen certainly plays a role in cancer cell starvation/death. Medical Oncologist Stephen Strum, one of the very top Medical Oncologists in the world who has specialized specifically in the treatment of recurring and advanced prostate cancer since 1983, advises: "ADT is NOT palliative. ADT can kill PC and kill enough of it to put you into a long term remission with some patients not requiring further ADT."

The action of LHRH agonists in shutting down the testicular produced fuel to cancer cells (testosterone), is starving at least a good deal of those cancer cells and thus causing PC cell apoptosis/death. An antiandrogen is assisting in this shut down by blocking androgen receptors from being activated by testosterone presence - so, in effect, also playing a role in starving the cancer cells and causing apoptosis. I have been a long time advocate of the addition of a 5Alpha Reductase (5AR) inhibitor to inhibit testosterone conversion to the more powerful stimulant to PC cell growth, dihydrotestosterone (DHT). I became even more a proponent for dutasteride/Avodart as the more appropriate 5AR inhibitor after reviewing several articles describing this medication as serving an even more important role. The gene TMPRSS2, which is regulated by androgen, promotes the growth of prostate cancer, while another gene, TFF3, blocks apoptosis and promotes proliferation. Dutasteride/Avodart was found to down regulate both of these genes while up regulating gene IGFBP3 resulting in PC cell apoptosis and inhibiting cell proliferation While attending an IMPaCT (Innovative Minds in Prostate Cancer Today) meeting of 600 prostate cancer research scientists and about 100 PC advocates/mentors held in Atlanta some years back, I found several poster displays with research scientists on hand explaining the role of TMPRSS2 in cancer cell development and the necessity to regulate this gene. Thus, dutasteride/Avodart as a part of ADT plays an important role in PC cell apoptosis. A lengthy compilation of the importance of 5AR inhibitors can be reviewed here: http://tinyurl.com/3gfd23r.

For some men, the foregoing androgen deprivation medications may eventually eradicate all their cancer cells - particularly if they were low in number and aggressiveness in the first place. For others, this will at least reduce the amount and concentration of cancer cells resulting in a much more prolonged period of management and control. Since Zytiga is a newer "shut-down-production of testosterone from all production sources" (testicular, adrenal gland, AND within the cancer cell itself), this medication would be considered in that same role of causing cancer cell death through starvation - as long as those cancer cells remain "dependent" on testosterone for survival. The other new-kid-on-the-block, Xtandi/enzalutamide, has a slightly different role of interfering with the ability of testosterone to even get to prostate cells by blocking testosterone from binding to the androgen receptor and in so doing, stopping the movement of the androgen receptor to the nucleus of prostate cancer cells. This prevents the receptor from binding to DNA, and induces cancer cell death.

However, once cancer cells become "independent" (can now continue to multiply without the need for testosterone to survive) the usual androgen deprivation medications no longer serve an adequate purpose, and the patient moves on to the "palliative" chemotherapy medications that, again, prolong the lives of many men, while not being so kind for others.