DIHYDROTESTOSTERONE (DHT) CONTROVERSY IN ANDROGEN DEPRIVATION THERAPY (ADT)

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

DISCLAIMER: Please recognize that I am not a Medical Doctor. I have been an avid student researching and studying prostate cancer as a survivor and continuing patient since 1992. I have dedicated my retirement years to continued research and study in order to serve as an advocate for prostate cancer awareness, and, from a activist patient's viewpoint, to voluntarily help patients, caregivers, and others interested develop an understanding of prostate cancer, its treatment options, and the treatment of the side effects that often accompany treatment. There is absolutely no charge for my mentoring – I provide this free service as one who has been there and hoping to make your journey one with better understanding and knowledge than was available to me when I was diagnosed so many years ago. Readers of this paper must understand that the comments or recommendations I make are not intended to be the procedure to blindly follow; rather, they are to be reviewed as my opinion, then used for further personal research, study, and subsequent discussion with the medical professional/physician providing your prostate cancer care.

WHY IS BLOCKING DHT IMPORTANT?

There is an abundance of activity that occurs in prostate cancer cells including the presence of androgen receptors, 5Alpha Reductase enzymes (5AR), testicular androgen/testosterone (T), DHEA-S and androstenedione adrenal androgen, and dihydrotestosterone (DHT) all involved. The T and adrenal androgen (both less powerful stimulants to prostate cancer (PC) development) come in contact with 5AR and are converted to DHT. DHT has a stronger affinity to access androgen receptors, and with access, is also a much stronger stimulant to PC development. Antiandrogens are administered to block androgen receptors from any T, adrenal androgen, and particularly DHT access that could stimulate PC development. Yet, because of DHT's stronger affinity to access at least some of the androgen receptors despite the antiandrogens, PC development can still occur. Therefore, to prevent the presence of DHT, 5AR inhibitors (dutasteride/Avodart, finasteride/Proscar) are prescribed to prevent T conversion to DHT.
When men are prescribed triple androgen/hormonal blockade with an LHRH agonist, an antiandrogen, and a 5Alpha Reductase (5AR) inhibitor, it has been established that with this protocol being effective PSA level should drop into the

ultrasensitive range below 0.05ng/ml and testosterone (T) to <=20ng/dl. I have been including that when a 5AR inhibitor dutasteride/Avodart or finasteride/Proscar is prescribed, dihydrotestosterone (DHT) level should be expected to fall to <3.0ng/dl. I make it a habit to maintain files to support such conclusions. However, I have been unable to find such reference and can only recall that I found that level noted somewhere in my research, but have since been unable to establish where. A PC friend questioned if I could provide reference to that level and I was unable to do so. In Medical Oncologist Stephen Strum's excellent article on the Prostate Cancer Research Institute website www.pcri.org regarding Intermittent Androgen Deprivation (October 2000 Insights), he remarked that <30 is the level in which DHT no longer needs to be checked. I asked Dr. Strum if he could clarify if a threshold of <3.0ng/dl has ever been established. He replied that he cannot recall if such a threshold had been mentioned, but since these 5AR inhibitors reduce the DHT level so significantly, this level does not have to be monitored. Normal DHT levels are between 30ng/dl and 100ng/dl (see Form F-3, page F-11 in "A Primer on Prostate Cancer – The Empowered Patient's Guide"), thus a level, preferably reasonably less than 30ng/dl, would indicate sufficient inhibition. At the end of this paper Medical Oncologist Charles E. "Snuffy" Myers has further comment in this regard. Accordingly, for those who may have filed the information that a preferred DHT threshold while prescribed a 5AR inhibitor should be <3.0ng/dl, please disregard.

DIHYDROTESTOSTERONE (DHT) LEVEL NOT DROPPING DESPITE 5ALPHA REDUCTASE (5AR) INHIBITORS.

Adrenal androgens such as DHEA-S and androstenedione may contribute to the testosterone pool. Check these levels. They should be markedly suppressed. If either are in the normal range then these precursors of testosterone may be the cause. In such cases, in the past HDK (high-dose ketoconazole) or Nizoral along with hydrocortisone (HC) was usually used, however, if your cancer has metastasized you would be eligible for the prescribing of the more recent Zytiga/abiraterone acetate that has pretty much replaced the use of ketoconazole/hydrocortisone. In that it has been determined that when ketoconazole binds to molecules of CYP17 it can come unbound again, Zytiga is now being prescribed since when it binds to a molecule of CYP17, that particular molecule of CYP17 is permanently disabled. See: http://tinyurl.com/3mjr598).

But read on for a better understanding of DHT.

There is recent literature to support the use of a different steroid called Aristocort (Triamcinolone) to suppress the androgen receptor more effectively. Aristocort is available via the Internet from a Canadian pharmacy. I believe it is also available in Germany. More on High Dose Ketoconazole: http://tinyurl.com/k5eewzh

From renowned Medical Oncologist Charles E. "Snuffy" Myers, who also specializes specifically in the treatment of prostate cancer:

http://www.prostateforum.com/article-03-26-07.html

"Since I opened my clinic—the American Institute for Diseases of the Prostate—in 2002, I've made it a practice to measure dihydrotestosterone levels in each patient we see. And I have to tell you that medical castration, while effective at reducing testosterone from the normal range of 300-800 ng/dL to below 30 ng/dL, often leaves dihydrotestosterone levels within the normal range (30-80 ng/dL). And dihydrotestosterone is ten times more powerful than testosterone at stimulating prostate growth, so a dihydrotestosterone of 30 ng/dL is potentially as powerful as a testosterone of 300. Dihydrotestosterone formation can be blocked in most patients with either Proscar or Avodart, with Avodart being more consistently effective. I've found this can aid in inducing remission in patients who've failed Lupron. Luckily, Proscar and Avodart don't cause any additional side effects in men on hormonal therapy. But again, we have to measure dihydrotestosterone levels to see if Proscar or Avodart are in fact suppressing dihydrotestosterone. "