



Treatment of advanced prostate cancer

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What to do when PSA rises despite the fact that you have been either surgically or medically castrated?

The first thing you do is make sure that you are actually sufficiently castrated, ie. that testosterone levels in the blood is below preferably 20 nanograms / dl. (= <0.69 mmol / l). Earlier it was 50, but today it is preferred to bring testosterone to under 20.

We know that 37.5% of castrated men with prostate cancer do not come under 20, and 12.5% do not come under 50.

Castration has an impact only on the testosterone produced in the testicles, but testosterone is also produced in the adrenal glands and in cancer cells themselves. 90% of circulating testosterone in the blood is bound to a protein substance in the blood SHBG (sex hormone-binding globulin), while the free testosterone enters the prostate cancer cells and is irreversibly converted to DHT (dihydrotestosterone) by the enzyme 5-alpha reductase.

DHT has a much greater affinity (binding capacity) - 2 - 5 times higher – to the so-called androgen receptor (AR) than testosterone itself. DHT also has a least 50 x greater binding capacity to AR than known anti-androgens such as Casodex. DHT also has 10 times higher ability to stimulate androgen receptor signalling to the nucleus to intensify growth.

And now comes the interesting part:

If you measure DHT in castrated men with prostate cancer, in many cases this is not reduced, but remains within normal range despite low testosterone.

This obviously means that you can ask yourself whether it is even worth it to castrate, when in many cases this does not bring DHT levels down.

Secondly, it means that such men with normal DHT obviously must be brought down to a lower level with the 5-alpha reductase inhibitor Avodart, which inhibits both of the two isoenzymes, called 5-alpha reductase.

Avodart 0.5 mg daily reduces DHT to 4% of the original level.

At Humlegaarden we measure testosterone as well as dihydrotestosterone (DHT), so we can identify the need for Avodart treatment.

A so-called ADT-3 treatment with Zoladex, 5-alpha reductase (Avodart) and an anti-androgen as Casodex has been developed, so you inhibit at all levels.

However, it is a problem that often an amplification of the androgen receptor gene takes place, so that the androgen receptor develops hypersensitivity to even very small amounts of DHT and testosterone.

This means that the cancer grows almost regardless of how high the concentration of T and DHT are.

Another problem is that castration affects only the testosterone produced in the testicles, but not testosterone, which comes from the adrenal gland and the cancer cells themselves.

It is therefore difficult to give a 100% effective treatment of hormone-sensitive prostate cancer, and we must appreciate that there are other ways to treat, namely, such as low-dose metronomic chemotherapy with the KEES protocol or a modification of this, where the cancer cell's hormone sensitivity does not mean anything.

Other options are angiogenesis inhibitors like Celebrex, food supplements like pomegranate, resveratrol, and Cool Cayenne. Noskapin, vitamin D3, and mistletoe compounds.

In addition there will be a more universal testosterone inhibitor on the market shortly, namely Abiraterone, expected to be approved in Denmark within the next year.