

Study suggests another look at testosterone-prostate cancer link

Beth Israel Deaconess Medical Center Boston April 19, 2011 – The long-standing prohibition against testosterone therapy in men with untreated or low-risk prostate cancer merits reevaluation, according to a new study published in *The Journal of Urology*.

"For many decades it had been believed that a history of prostate cancer, even if treated and cured, was an absolute contraindication to testosterone therapy, due to the belief that testosterone activated prostate cancer growth, and could potentially cause dormant cancer cells to grow rapidly," says Abraham Morgentaler, MD of Men's Health Boston. "Generations of medical students and residents were taught that providing testosterone to a man with prostate cancer was like pouring gasoline on a fire."

This study, involving 13 symptomatic testosterone deficient men who also had untreated prostate cancer, suggests this traditional view is incorrect, and that testosterone treatment in men does not cause rapid growth of prostate cancer. It is the first to directly and rigorously assess changes in the prostate among men with prostate cancer who received testosterone therapy.

The men received testosterone therapy while undergoing active surveillance for prostate cancer for a median of 2.5 years. Median age was 58.8 years. The initial biopsy Gleason score was 6/10 for 12 of the men, 7/10 for the other (Gleason score grades the aggressiveness of prostate cancer by its microscopic appearance on a scale of 2-10. Gleason 6 is generally considered low to moderately aggressive, and Gleason 7 moderately aggressive).

Mean testosterone concentration increased from 238 to 664 ng/dl with treatment, yet neither prostate specific antigen (PSA) concentrations nor prostate volume showed any change. Follow-up biopsies of the prostate were performed in all men at approximately yearly intervals, and none developed cancer progression. In fact, 54 percent of the follow-up biopsies revealed no cancer at all.

Although the number of men in the study was small, and none had aggressive or advanced prostate cancer, Morgentaler observed, "These men were rigorously followed. The cancers in these men were typical of the prostate cancers for which

men have undergone invasive treatment with surgery or radiation for 25 years. Clearly, the traditional belief that higher testosterone necessarily leads to rapid prostate cancer growth is incorrect."

In a Journal of Urology editorial comment, Martin M. Miner, MD, of the Miriam Hospital and Warren Alpert School of Medicine of Brown University notes the conclusions represent "a remarkable shift in thinking from only five years ago. ... If testosterone therapy was not associated with disease progression in men with untreated prostate cancer, how concerned must we be about testosterone therapy in men with treated prostate cancer?"

"An increasing number of newly diagnosed men with prostate cancer opting for active surveillance, and with many of them also desiring treatment for their signs and symptoms of testosterone deficiency, the results suggest a reevaluation of the long standing prohibition against offering testosterone therapy to men with prostate cancer," says Morgentaler.

Refraining from testosterone therapy due to unmerited prostate cancer fears may have adverse lifestyle and health consequences, since testosterone therapy in testosterone deficient men has been shown to improve symptoms of fatigue, decreased libido, and erectile dysfunction. Testosterone therapy may also improve mood, blood sugar control, increase muscle, decrease fat, and improve bone density. Four recent studies have shown that men with high testosterone levels appear to live longer than men with low levels, although it has not yet been shown that treating men with testosterone increases longevity.

Morgentaler commented on an Italian study that showed that low levels of testosterone were associated with aggressive prostate cancer. The risk of aggressive cancer was reduced for men with normal testosterone compared with men with low testosterone.

In an editorial in the journal *Cancer*, "Turning Conventional Wisdom Upside Down: Low Serum Testosterone and High-Risk Prostate Cancer Morgentaler wrote, "After seven decades of circumstantial evidence pointing us in the wrong direction, perhaps it is time to consider the once unthinkable – conducting a testosterone therapy trial of sufficient size and duration to determine whether normalization of serum testosterone in older men may reduce the risk of prostate cancer, particularly high-risk prostate cancer."

Beth Israel Deaconess Medical Center in Boston, Massachusetts is a teaching hospital of Harvard Medical School. It was formed out of the 1996 merger of Beth Israel Hospital and New England Deaconess Hospital.