Re: The Effect of Testicular Cryoablation on Testosterone Level in Rats: An Experimental Model of Histopathological Orchiectomy

In this issue of the Urology Journal, Ozcan and colleagues reported on the efficacy of testicular cryoablation for providing castrate level of serum total testosterone in rats. The beneficial effects of androgen deprivation therapy (ADT) on prostate cancer (PCa) have been known for more than a half century.[1] To achieve the castrate level of testosterone usually two types of treatment methods, luteinizing-hormone releasing hormone (LH-RH) analogue administration or bilateral orchiectomy are used. The first comes at a cost with own disadvantages and the later has psychologic burden. Therefore the authors should congratulate for their study to finding alternative treatment modality for advanced PCa. Cryoablation is used for treatment of different cancer as primary treatment. Cryoablation is also used to relieve the pain of many different types of cancer that metastasize the bone or other organs. The adverse events associated with LH-RH analogs administration are well characterized.[2] An adverse event that is commonly overlooked, yet, is the failure to decrease or maintain serum levels of testosterone that would be achieved with LH-RH agonists administration. In addition the testosterone surge that occurs after initial administration of LH-RH agonists can cause cancer flare in up to 63% of patients with advanced PCa.[3] In certain men with advanced PCa, these flares are accompanied by serious adverse events that can result in urinary retention and spinal cord compression, which can lead to paralysis and, rarely, death.[4]

Testosterone breakthrough and the acute-on-chronic effects of LH-RH analog administration may cause serum testosterone concentrations to periodically increase, sometimes to non-castrate levels. The goal of ADT should be consistent achievement and maintain the castrate levels of testosterone without significant side effects. Inadequate suppression of serum testosterone concentration is currently poorly known and may possibly have an effect of PCa mortality. So the important question today is, "is there a best castration therapy"? This is study is the first one addressing the effectiveness of testicular cryoablation to achieve castrate level of testosterone. Animal study, particularly that relating to pharmaceuticals, may be a poor predictor of human experience. Before clinical trials are performed, the efficacy and safety of new drugs or treatment modalities are usually investigated in animal models. Some believe, however, that the results from animal researches are not applicable to humans because of biological differences between the species. One reason why animal researches usually do not translate into replications in human trials[5] is that many animal studies are poorly designed, performed and analyzed. Another possible explanation to failure to replicate the results of animal experiment in humans is that reviews and extraction of evidence from animal research are methodologically inadequate.[6] Despite significant limitations of animal studies, there are many cases in which the results of carefully and well designed experiments using animals have contributed significantly to medicine progress and consequently benefited humans. Do cryoablation for ADT really work? More scientific researches are needed of the subject to respond this question.

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First of all we are pleasure because of what you say about our issue. As you say, in this research, we reported on the efficacy of testicular cryoablation for providing castrate level of serum total testosterone in rats. May be animal researches are not applicable to humans because of biological differences between the species. But despite significant limitations of animal studies, there are many cases in which the results of carefully and well-designed experiments using animals have contributed significantly to medicine progress and consequently benefited humans. You asked "Do cryoablation for ADT really work?" We can say 'Yes', but more scientific researches are needed of the subject to respond this question. And finally again we would like to say thank You.

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