

EDITORIAL

Androgen Deprivation in Localized Prostate Cancer: Indications, Types and Side Effects

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Androgen deprivation has long been a therapeutic option in the treatment of prostate cancer since Huggins & Hodges described the effect of castration on the prostate gland [1]. Since then, the results of a large number of retrospective and prospective studies helped support the important role of androgen deprivation in prostate cancer [2]. However, increasing attention has been focused on the possible side effects of androgen deprivation [3]. Thus, the importance of understanding the mode of action, types of available preparations, as well as the appropriate indications and supporting literature on the subject has never been greater. The gains achieved through the integration of androgen deprivation may be lost if androgen deprivation is used inappropriately with a resultant decrease in the risk-benefit ratio. A comprehensive review of androgen deprivation in localized prostate cancer will include its use in the external beam, brachytherapy and prostatectomy settings per available literature. A review of the mechanism of action, side effects and new developments will be embarked upon.

ANDROGEN DEPRIVATION IN LOCALIZED PROSTATE CANCER

Androgen deprivation may be used in conjunction with definitive treatment of prostate cancer. The indications and benefits vary widely with the type of treatment and the patient's risk group determination. The role of neoadjuvant and adjuvant androgen deprivation therapy is greater and more widely studied in large controlled randomized studies in conjunction with external beam radiation [4-7]. However data is available for patients treated with brachytherapy [8] as well as those undergoing a prostatectomy [9-11] - although not as robust, and generally of a lower category than that with external beam radiation.

The greater appreciation of side effects associated with androgen deprivation presents a challenge to develop novel approaches to further identify subsets of patients that may benefit from the treatment leading to an improvement in the risk-benefit ratio [12].

Development of new approaches targeting alternate pathways necessary for androgen receptor function is a priority that would lead to new tools in the armamentarium of prostate cancer treatments.

Manoharan & Katkooori discuss the role of androgen deprivation in the prostatectomy setting, both in the neoadjuvant and adjuvant setting and summarize the available clinical trial data.

Ezzeldine & Abdel-Wahab review clinical evidence on the use of androgen deprivation in conjunction with external beam radiation in localized prostate cancer. They cover the potential role of neoadjuvant as well as adjuvant androgen deprivation in conjunction with radiation of the intact prostate. This review provides a broad understanding of our present knowledge in the use of androgen deprivation with external beam radiation of the intact prostate.

Hatoum & Hobeika present an overview of the use of androgen deprivation in conjunction with brachytherapy in localized prostate cancer

Gustavo Fernandez-Castro describes the side effects of androgen deprivation in prostate cancer patients. The authors discuss the diverse multi-system effects leading to neurocognitive and psychological effects, and sexual dysfunction, metabolic and cardiovascular effects, among others.

Soley Bayraktar & Abdel-Wahab provide an extensive description of the Medical and surgical options for androgen deprivation in prostate cancer patients, including new formulations and cost issues related to treatment. They also include a discussion of evolving topics such as the role of antiandrogen monotherapy and intermittent androgen suppression

Soley Bayraktar provides a comprehensive current understanding of the androgen receptors' molecular mechanism of action and the rationale behind androgen deprivation. She comprehensively review the mechanisms of action of LHRH agonists, antagonists & antiandrogens. She also discuss novel secondary therapies such as inhibitors of adrenal androgen synthesis and 5- α -reductase inhibitors. She also provide an overview of other pathways to androgen-independence and novel concepts in receptor blockade such as receptor dimerization antagonists and HSP90 inhibitors among others.

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