



REVIEW ARTICLE

Treatment of gynecomastia in patients with prostate cancer and androgen deprivation[☆]

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KEYWORDS

Prostate cancer;
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Abstract

Context: Gynecomastia, defined as benign proliferation of glandular breast tissue has a prevalence of 32–72% in the male. In the urology setting, it is associated to patients with prostate cancer and hormone treatment with a prevalence of 15% in the case of complete hormone blockage and 75% in monotherapy. The different options of treatment in prostate cancer have changed in recent decades. Thus, we have focused on this subject to evaluate the different therapy options of hormone manipulation induced gynecomastia in prostate cancer patients.

Objective: To synthesize the available evidence on the different therapeutic options in prostate cancer patients who develop gynecomastia due to the use of nonsteroidal antiandrogens and to generate a diagnostic algorithm and treatment.

Acquisition of evidence: Using the PICO type structured search strategy (patient or problem, intervention, comparison, outcome or result) in the data bases of PubMed-Medline and Cochrane, identification was made of the relevant studies related to the treatment of gynecomastia in prostate cancer patients treated with nonsteroidal antiandrogens.

Synthesis of evidence: We have found 3 possible therapeutic options for the treatment of gynecomastia and mastodynia in patients with hormone deprivation therapy for prostate cancer. The 10 Gy radiotherapy would be an option for the treatment of gynecomastia, although not all the patients need prophylactic treatment since only 50% report moderate–severe discomfort. Another option is the use of drugs such as tamoxifen 20 mg/day that lead to a significant decrease in the mammary effects.

Conclusions: Gynecomastia and mastodynia, given their high incidence, make the physical examination a fundamental tool for all patients before initiating treatment with antiandrogens. The use of tamoxifen 20 mg/day is the best treatment and prevention option against gynecomastia and mastodynia, while in the case of long-course established gynecomastia, surgery is the gold standard.

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PALABRAS CLAVE

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**Manejo de la ginecomastia en pacientes con cáncer de próstata y privación
androgénica****Resumen**

Contexto: La ginecomastia, definida como una proliferación benigna de tejido glandular mamario, se presenta en el varón con una prevalencia entre el 32–72%. En el ámbito de la Uroología se asocia a pacientes con cáncer de próstata y tratamiento hormonal, con una prevalencia del 15% en el caso de bloqueo hormonal completo y del 75% en monoterapia. Las diferentes opciones de tratamiento del cáncer de próstata han cambiado en las últimas décadas. Es por este motivo por lo que nos centramos en este tema para valorar las diferentes opciones terapéuticas de la ginecomastia causada por la manipulación hormonal en pacientes con cáncer de próstata.

Objetivo: Sintetizar la evidencia disponible sobre las diferentes opciones terapéuticas en pacientes con cáncer de próstata que desarrollan ginecomastia por el uso de antiandrógenos no esteroideos, y generar un algoritmo de diagnóstico y tratamiento.

Adquisición de evidencia: Mediante el uso de estrategia de búsqueda estructurada tipo paciente problema, intervención, comparación, *outcome* o resultado (PICO) en la base de datos de PubMed-Medline y de la Cochrane se llevó a cabo la identificación de estudios relevantes relacionados con el manejo de la ginecomastia en pacientes con CaP tratados con antiandrógenos no esteroideos.

Síntesis de evidencia: Nos encontramos con 3 posibles opciones terapéuticas para el manejo de la ginecomastia y la mastodinia en pacientes que realizan tratamientos de privación hormonal para el cáncer de próstata. La radioterapia 10Gy sería una opción para el tratamiento de la ginecomastia, aunque no todos los pacientes necesitan un tratamiento profiláctico, ya que solo el 50% refieren molestias moderadas-severas. Otra opción es el empleo de fármacos como tamoxifeno 20 mg/d que ocasiona una disminución importante de los efectos mamarios.

Conclusiones: La ginecomastia y la mastodinia, dada su alta incidencia, hacen que la exploración física sea un arma fundamental para todos los pacientes antes de iniciar un tratamiento con antiandrógenos. El empleo de tamoxifeno 20 mg/d constituye la mejor opción para el tratamiento y la prevención de la ginecomastia y la mastodinia, mientras que en el caso de la ginecomastia establecida de larga evolución la cirugía es el patrón de oro.

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Introduction

Gynecomastia is defined as benign proliferation of breast glandular tissue. Gynecomastia can be unilateral or bilateral and may be accompanied with some discomfort described as tension and pain of varying intensity. It is caused by an increased proportion of estrogens with respect to circulating androgens, thus creating an imbalance in the proportion of androgens: estrogens in breast tissue.¹ It is necessary to differentiate it from pseudogynecomastia, which consists of an enlargement of the fatty deposit in the breast area without an enlargement of accompanying glandular tissue.

Histologically, in the first stages of gynecomastia there is a proliferation of the glandular ducts accompanied by epithelial hyperplasia and an increased stroma with greater vascularization and periductal edema. When gynecomastia becomes chronic and perpetuates itself for more than a year, there is a decrease in ductal proliferation and stromal hyalinization and fibrosis occur, this being an irreversible process.² In males, it may be due to physiological causes, or in some cases by pathological causes such as cirrhosis, malnutrition, testicular tumors, hyperthyroidism, dialysis and drugs from the calcium channel blockers family, H2 receptor blockers, aldosterone antagonists and, in our field, drugs for hormonal treatment of prostate cancer (PCa), which create

an imbalance between estrogens and androgens.¹ The prevalence of drug-induced gynecomastia is around 10–20%.²

Gynecomastia, in turn, has a prevalence which ranges between 32 and 72% with a bimodal peak of incidence.² The first peak occurs at puberty, with a prevalence varying between 4 and 69%, and the second peak occurs between the fifth and eighth decades of life, with a prevalence of around 24–65%.² These wide differences in prevalence are due to differences among observers and to the difference in the age distribution of the examined teenagers. This first peak is physiologic gynecomastia, since estradiol levels increase to adult levels earlier than testosterone, resulting in an imbalance which comes to an end when reaching adult testosterone levels. In the case of the second peak, that difference in prevalence is also due to the existing differences in age distribution and among observers. In this second group, we must take into account that there was a group, which accounted for 25%, where we did not find the cause for gynecomastia, and drugs, which also accounted for 10–25%.³

In the Urology field, gynecomastia is mainly associated with patients receiving hormone therapy for PCa.⁴ The prevalence of gynecomastia is 15% in those patients with complete hormonal blocking and increases to 75% when antiandrogens are used in monotherapy,⁵ and it may be

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