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REVIEW ARTICLE

# Diagnosis and treatment of prostate cancer in Central America and the Caribbean

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## Abstract

*Prostate cancer (PC) is the most common cancer among men. Differences in mortality among countries reveal discrepancies in prevention, early detection, treatment access, diagnostic tests, and disease management. Due to the lack of evidence of an optimal treatment sequence, specialists in Urology and Oncology from six different countries in Central America and the Caribbean (CAC) developed homogenous guidelines to standardize and optimize PC care in the region. These recommendations are based on the experience of the experts to homogenize current knowledge, focusing on patients' needs, and adapting the guidelines to the context of CAC countries.*

**Keywords:** *Prostate-specific antigen. Prostatic hyperplasia. Prostate cancer. Prostatic neoplasms. Prostatic neoplasms. Castration-resistant.*

## *Diagnóstico y tratamiento del cáncer de próstata para Centroamérica y el Caribe*

## Resumen

*El cáncer de próstata (CP) es la neoplasia maligna más frecuente entre los hombres. Las diferencias en la tasa de mortalidad entre los países revelan discrepancias en la prevención, la detección precoz, el acceso al tratamiento, las pruebas diagnósticas y el manejo de la enfermedad. Dada la falta de evidencia de una secuencia óptima de tratamiento, especialistas en urología y oncología de seis diferentes países de Centroamérica y el Caribe (CAyC) desarrollaron guías homogéneas para estandarizar y optimizar la atención del CP en la región, basadas en su experiencia y los conocimientos actuales, centradas en las necesidades de los pacientes y adaptadas al contexto de CAyC.*

**Palabras clave:** *Antígeno específico de la próstata. Hiperplasia prostática. Cáncer de próstata. Neoplasias prostáticas. Neoplasias prostáticas. Resistente a la castración.*

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## Introduction

Prostate cancer (PC) is the most common cancer among men in the Americas and one of the leading causes of cancer-related deaths worldwide[1]. PC is most prevalent in males aged 50 or older. It has become the fourth leading type of cancer worldwide, contributing about 7.1% of the total cancer incidence burden (1.3 million cases). Its incidence and mortality have increased in the past few decades due to lifestyle changes and environmental risk factors in Central America and the Caribbean (CAC)[2,3].

Based on estimates from GLOBOCAN, the profile of cancer is changing in the CAC region, with high age-standardized incidence and mortality rates for PC. The differences in mortality among countries reveal discrepancies in prevention, early detection, access to treatment, and disease management[4]. Therefore, homogenous guidelines are needed to standardize care.

This document of consensus provides recommendations for the professionals involved in the development of health-care policies, protocols, programs, and strategies related to the diagnosis and treatment of PC in the region. In addition, the consensus has two objectives: (a) to enhance the understanding of PC diagnosis and treatment and (b) to reach an agreement on and standardize PC diagnosis and treatment in CAC countries.

## Materials and methods

A group of 12 specialists in urology and oncology with experience in PC from six different CAC countries (Costa Rica, the Dominican Republic, El Salvador, Honduras, Guatemala, and Panama) was gathered to reach a consensus. Experts were selected based on their expertise on the topic and knowledge of the local challenges and conditions for diagnosing and treating PC. Specialists were divided into three groups, and each group was assigned one of the following topics: (1) localized PC/biochemical recurrence (LPC/BCR); (2) non-metastatic castration-resistant PC/metastatic castration-sensitive PC (nmCRPC/mCSPC); and (3) metastatic castration-resistant PC (mCRPC).

The first meeting occurred in July 2020. A literature review about PC diagnosis and treatment was conducted by each group during the meeting, comparing the scientific evidence with the experts' experience. Literature in English and Spanish was retrieved from Pubmed and Scielo biomedical databases, including randomized controlled trial and their open extensions, systematic and narrative reviews, and meta-analyses. To that end, the Nominal Group Technique was used by forming small discussion groups to reach a consensus among their members[5,6].

During the second meeting in August 2020, each group discussed and developed treatment flowcharts based on clinical evidence and the experience of participants until a consensus was reached and the information included was validated.

Then, each group had three separate meetings in September 2020 to work on the conceptual aspects of the flowcharts. In October 2020, a general meeting was held with the entire panel of experts, in which through presentations, debates, and workshops, a moderator facilitated the discussion among the participants to reach general agreements on what had been discussed in each group.

After this meeting, all the information was gathered in the first draft, which was discussed in another general session. An update meeting was performed in March 2023, to include the most recent evidence to this final document.

## Screening and early detection

According to European ("PC: ESMO Clinical Practice Guidelines for diagnosis, treatment, and follow-up") and regional guidelines ("PC in Brazil and Latin America: epidemiology and screening," "Clinical practice guideline for screening, diagnosis, and initial treatment of localized and locally advanced PC in the Peruvian Social Security") individuals with no family history of PC should be screened using prostate-specific antigen (PSA) testing and digital rectal examination (DRE) beginning at 50 years of age, whereas individuals with a family history of PC should begin at 45 years of age. In patients with a family history of early onset of PC in a first-degree relative, the recommendation is to begin 5 years earlier than the age at which the relative was diagnosed. However, considering the increasing incidence of PC in the region, the experts suggest beginning at 45 and 40 years of age, respectively. The screening may be adapted to the quality of life and life expectancy of each patient. It is recommended to perform the screening up to the age of 75 or if the patient has a life expectancy of more than 10 years. Patients over the age of 75 who have never been screened for PC should be controlled and managed based on the results[7-9]. The benefits and potential risks of PC screening should be discussed with each patient, to avoid unnecessary

biopsies, overdiagnosis, and overtreatment[7]. Of note, the male CAC population is still relatively unaware of PC and DRE is influenced by cultural factors.

According to the experts, the screening methods used in the region are DRE and PSA, being more effective when combined. The PSA threshold for biopsy is 4.0 ng/mL. PSA levels ≥ 2.5 ng/mL in individuals aged 40 or younger should be considered a warning sign that requires further investigation and follow-up. In such cases, the health-care professional should consider the patient's medical history, free PSA level (a 20% cutoff is the average in the region), and PSA velocity (0.75 ng/mL/year in patients with no risk factors or 0.4 ng/mL/year in patients with risk factors). Young men with a PSA level > 4 ng/mL should be treated with alpha-blockers, antibiotics, and anti-inflammatory agents, followed by PSA retesting 2-3 weeks later, before considering biopsy[8].

## Management of LPC

The diagnosis of LPC is established by histopathological evaluation of an ultrasound-guided biopsy. Ultrasound-guided transrectal and transperineal biopsy are the recommended methods, transrectal biopsy under general anesthesia being the most common. A transperineal biopsy may be a safer alternative for patients who had previous bacteremia-related complications following a biopsy and rejected the procedure. At least 12 samples should be taken (6 from each side). Depending on the prostate size or the presence of hypoechoic nodules, taking additional samples from suspicious areas may be considered. Re-biopsy is suggested if PSA levels are still high[2,3].

The experts recommend a cognitive biopsy as an option that may improve accuracy. This technique consists of guiding the biopsy by reviewing multiparametric magnetic resonance imaging (mpMRI) to examine suspicious lesions in non-peripheral zones[2,3]. However, according to the experts, this technique is not usually used in CAC countries due to limited access to mpMRI and logistical reasons. In patients with a family history of cancer, the experts recommend performing an evaluation for germline mutations. To estimate the prognosis and guide treatment decisions, LPC is categorized as low risk, intermediate risk, and high risk (Table 1).

The Eastern Cooperative Oncology Group (ECOG) Performance Status (PS) scale is recommended to decide on the diagnostic approach in patients with poor general health status and in the elderly, where a biopsy might not be necessary. Management of LPC is summarized in figure 1.

**Table 1.** Risk categorization of localized PC

| | Low risk | Intermediate risk | High risk |
|---|---|---|---|
| Gleason score | 6 | 7 | 8-10 |
| PSA | < 8 ng/mL | 10-20 ng/mL | > 20 ng/mL |
| TNM | T1-T2a | ≥ T2b | ≥ T2c |

TNM: tumor, node, metastasis.
*Source: Table developed by authors based on available evidence[2,3].*

### Treatment of low-risk LPC

According to García-Perdomo et al., active surveillance is recommended for patients with low-risk diseases and for those who cannot or do not want to undergo radical treatment[3]. Active surveillance consists of careful PC monitoring, including visits to measure PSA every 6 months and DRE once a year. It also includes prostate biopsies and/or imaging tests every 1-3 years depending on PSA velocity. When a clinical and biochemical diagnosis of PC is obtained, a shared decision with the patient to initiate an androgen deprivation therapy (ADT) is recommended, even in subjects without a confirming biopsy[3].

Radical prostatectomy (RP) and radiotherapy (RT) are available options for men with low-risk disease who are unfit for active surveillance. In patients unwilling to have a surgical procedure, conformal RT using a linear accelerator or brachytherapy with curative intention may be indicated[7]. These strategies are also recommended for patients with a history of transurethral resection of the prostate or prostate adenectomy or in older patients with good PS and life expectancy[1,2]. According to the evidence and the experts' best knowledge, the lack of economic resources in the region usually prevents patients from having access to this type of treatment[7].

Observation until symptomatic progression is an alternative for patients who are not suitable or willing to receive curative treatment or have a life expectancy of fewer than 10 years[1,2].

### Treatment of intermediate-risk LPC

ESMO Clinical Practice Guidelines for PC recommend RP or RT for the treatment of patients with intermediate-risk LPC. RP with lymphadenectomy is the main recommendation[10]. RT with neoadjuvant ADT is recommended for 6 months (2 months before, 2 months

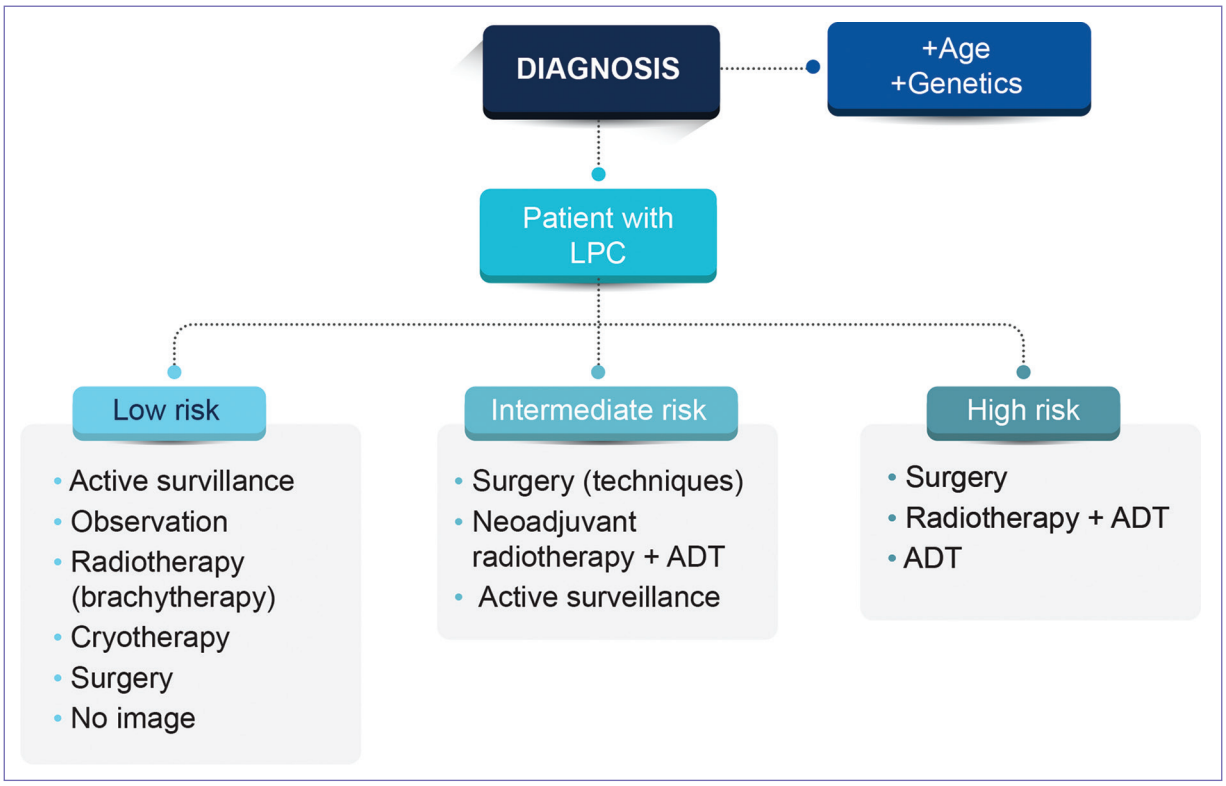


**Figure 1.** Algorithm for LPC management (*source: figure developed by authors*). ADT: androgen deprivation therapy.

during, and 2 months after the procedure). PSA levels should be monitored following RP. Salvage RT is recommended for patients with PSA failure with RP, beginning with a PSA level of 0.5 ng/mL. Men under salvage RT can receive ADT for 6 months or bicalutamide (150 mg daily) for 2 years. Active surveillance is an option for patients who refuse treatment at diagnosis[7].

## *Treatment of high-risk LPC*

According to Sierra et al., the treatment of high-risk LPC includes RT and surgery. RT plus ADT is the first alternative, with outcomes and test results comparable to surgery. ADT is administered for 2-6 months before RT and then for 2-3 years. Access to follow-up and advanced therapies should be available for patients treated with ADT. Performance of bone density testing is recommended before treatment and after 1-year follow-up[11].

The surgical option consists of RP with lymphadenectomy. Orchiectomy may be an option for patients who refuse RP, do not have other resources, have limited access, or refuse follow-up. It is recommended to monitor PSA as follows: year 1, every 3 months; year 2, every 4 months; year 3, every 6 months up to year 5; from year 5 onwards, annual control until year 7-10[11].

The 2023 National Comprehensive Cancer Network (NCCN) Guideline establishes that patients with BCR are classified into three groups: persistent disease (PSA levels fail to achieve undetectable levels after RP), PSA recurrence (undetectable PSA levels are achieved, but subsequent PSA levels are detectable and increased on two or more determinations), and persistent but low PSA (attributed to slow PSA metabolism or residual benign tissue). This last group does not require further evaluation until PSA increases. Patients from the first two groups should be evaluated for distant metastases[12].

Patients with PSA recurrence after RP and no distant metastases may either be observed or undergo primary salvage external beam radiation therapy (EBRT) with or without ADT. ADT alone is used as a salvage treatment in patients with proven or high suspicion for distant metastases. RT directed to metastases may be administered if they are located in weight-bearing bones or if the patient is symptomatic. Observation is acceptable for selected patients and ADT may be

delayed until symptoms develop, or PSA levels suggest that symptoms are imminent[11]. According to the recent update of ESMO guidelines, in the subset of patients with very high-risk M0 PC (defined by N1 disease or ≥ 2 risk factors among T3-T4, PSA > 40 ng/mL and/or Gleason score 8-10), treatment with abiraterone + prednisone for 2 years increases metastases-free survival and overall survival[13].

BCR (three successive PSA rises above 0.2 ng/mL) may occur up to 1 or 2 years after curative treatment. If treatment involves RT, BCR is defined as a PSA rise by 2 ng/mL above the nadir up to 1 year after RT. In these patients, ruling out metastatic disease is recommended[11].

If PSA doubling time (PSADT) is shorter than 10 months, the treatment consists of androgen blockade and local RT. If PSADT is longer, local RT is recommended. ADT is recommended after 1 or 2 years. Docetaxel or novel hormonal therapies (NHT), such as apalutamide, are used in patients at high risk for metastases (PSADT ≤ 10 months)[14]. Longer follow-up of these trials is needed to determine the impact of these therapies on overall survival due to the lack of consistency among published trials.

Prostate-specific membrane antigen (PSMA) positron emission tomography (PET) is a promising imaging technique, especially in high-risk patients. Nevertheless, its novelty, the need for a learning curve, and its low availability are still barriers to PSMA-PET implementation in CAC.

## Management of mCSPC

According to the experts, the management of mCSPC is a public health concern in CAC countries, due to its high mortality and morbidity rates among men. The average survival for a patient with a high burden is still 3.5 years, even if they have access to the best care[15]. Therefore, access to NHT and docetaxel becomes relevant. Management is summarized in figure 2.

According to the American Urological Association (AUA)/Society of Urologic Oncology (SUO) Guidelines (2023)[14], in patients with mCSPC, conventional imaging should be used to assess the extent of the disease. The CHAARTED trial established high- and low-volume disease criteria, defining high-volume as the presence of visceral metastases and/or four or more bone lesions with at least one beyond the vertebral bodies and pelvis. Low volume refers to the rest of the participants. In the LATITUDE trial, high-risk disease was defined as at least two of the following criteria: (a) three or more lesions on bone scan, (b) Gleason score ≥ 8, and (c) any visceral metastases. The approach varies depending on the type of treatment: for chemotherapy, definitions by volume are more appropriate; on the contrary, for hormonal agents (abiraterone), definitions by risk level are used[12,14,16].

The experts agree that the most common imaging approach used in the region to evaluate metastatic PC is the metastatic bone series. Computed tomography (CT) scan and bone scan can detect high-volume mCSPC. The AUA ASTRO SUO guidelines advise that if these tests are negative in patients with high suspicion of metastasis, a PET/CT scan, and a bone scan may be indicated to detect low-volume mCSPC[14].

The histologic diagnosis of PC is based on biopsies. In patients with symptomatic mCSPC, treatment should not be delayed, and biopsy can be slightly postponed. In addition, all patients should be offered genetic counseling and germline testing, which are crucial for the diagnosis and staging of PC[14]. According to the experts, this type of testing is not available in all CAC countries but should be encouraged.

### *Treatment of patients with high-volume mCSPC*

Based both on the NCCN and AUA/ASTRO/SUO guidelines, and on ARASENS and PEACE-1 clinical trials, experts agree that permanent pharmacological or surgical ADT is recommended. Symptomatic patients with high-volume mCSPC may be initially treated with docetaxel and ADT, abiraterone and darolutamide (triplet therapy is a suitable option), or as an alternative, apalutamide, or enzalutamide. Those patients not candidates for docetaxel and with a low burden of metastatic disease and poor functional status should receive abiraterone, apalutamide, or enzalutamide. Levels of serum testosterone should be monitored to confirm castration (lower than 50 ng/dL). During treatment with apalutamide and enzalutamide, a monthly follow-up visit can be scheduled during the first 3 months. After that, follow-up visits can be scheduled every 2 months, depending on the patient's age[12,14,17-19]. Experts consider that visits should be scheduled every 6-12 weeks for clinical assessment, physical examination, routine chemical tests, and PSA. Nevertheless, patients receiving upfront chemotherapy may need more frequent visits. Imaging tests should be indicated if a rise in PSA is detected or in case of clinical suspicion of progressive disease; otherwise, they should be performed once a year.

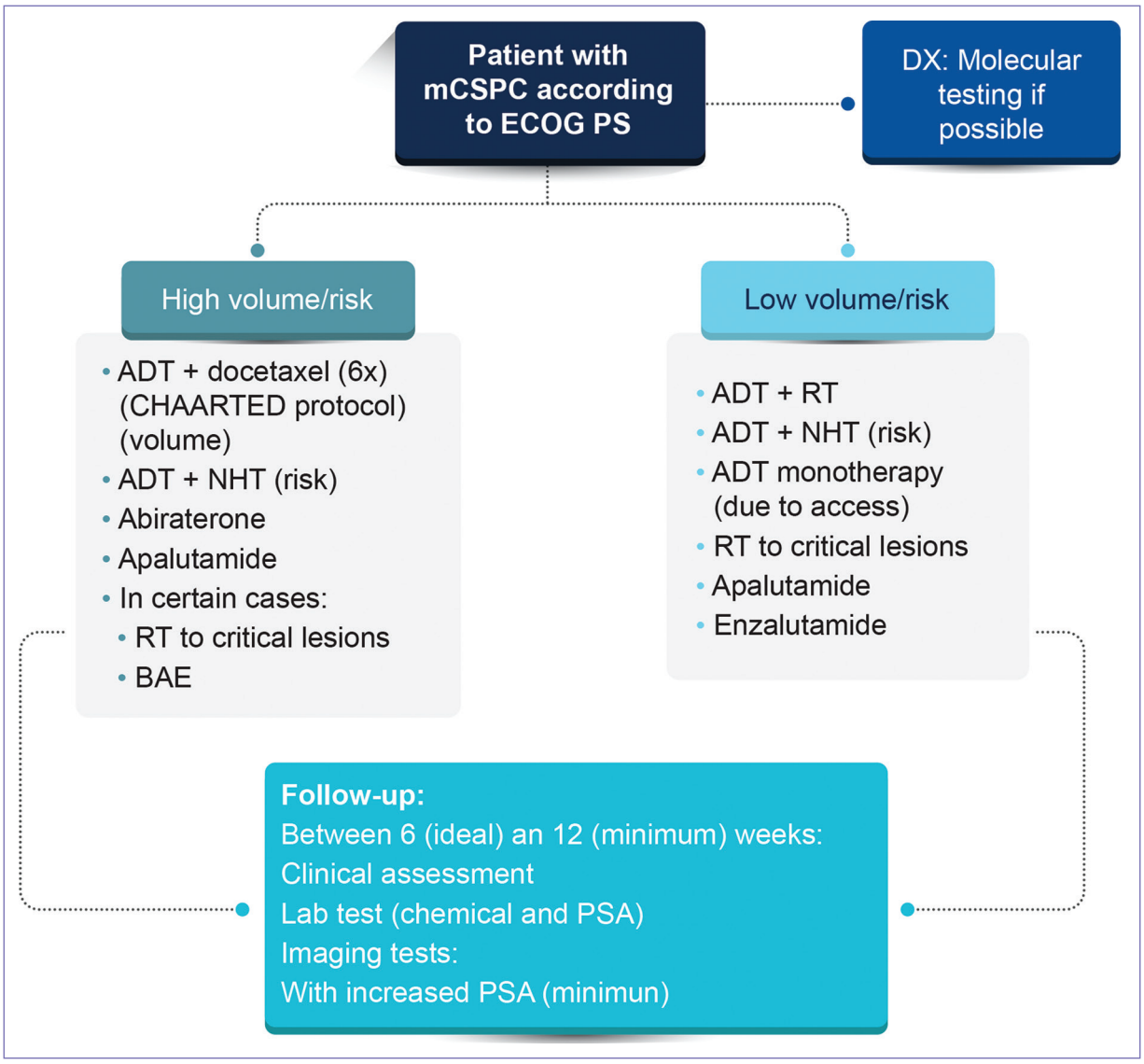


**Figure 2.** Algorithm for mCSPC management (*source: figure developed by authors*). ADT: androgen deprivation therapy; BAE: Bone antiresorptive; Dx: diagnosis; NHT: novel hormonal therapies; PSA: prostate-specific antigen; RT: radiotherapy.

## *Treatment of patients with low-volume mCSPC*

Pharmacological or surgical ADT should be prescribed to these patients. NHT administered from the beginning, in combination with ADT and RT, is the best treatment option for patients with low-volume/low-risk. Although NHT is available in the region, not all the candidates have access. When NHT is unavailable, the next best option is ADT + RT. Of note, the recommendation for RT is limited to selected patients with *de novo* oligometastatic mCSPC. Localized RT in the prostate or prostate bed may be effective at low doses. In other areas, localized RT may be helpful in relieving bone pain or hematuria. First-generation antiandrogens in combination with luteinizing hormone-releasing hormone agonists should not be administered to patients with mCSPC, except to block testosterone flares. The professional should obtain a baseline PSA and serial PSAs at 3-6-month intervals after initiation of ADT and consider periodic conventional imaging[20].

## Management of nmCRPC

CRPC is defined as disease progression during treatment with ADT despite castrate levels of serum testosterone (< 50 ng/dL). According to the SPARTAN,

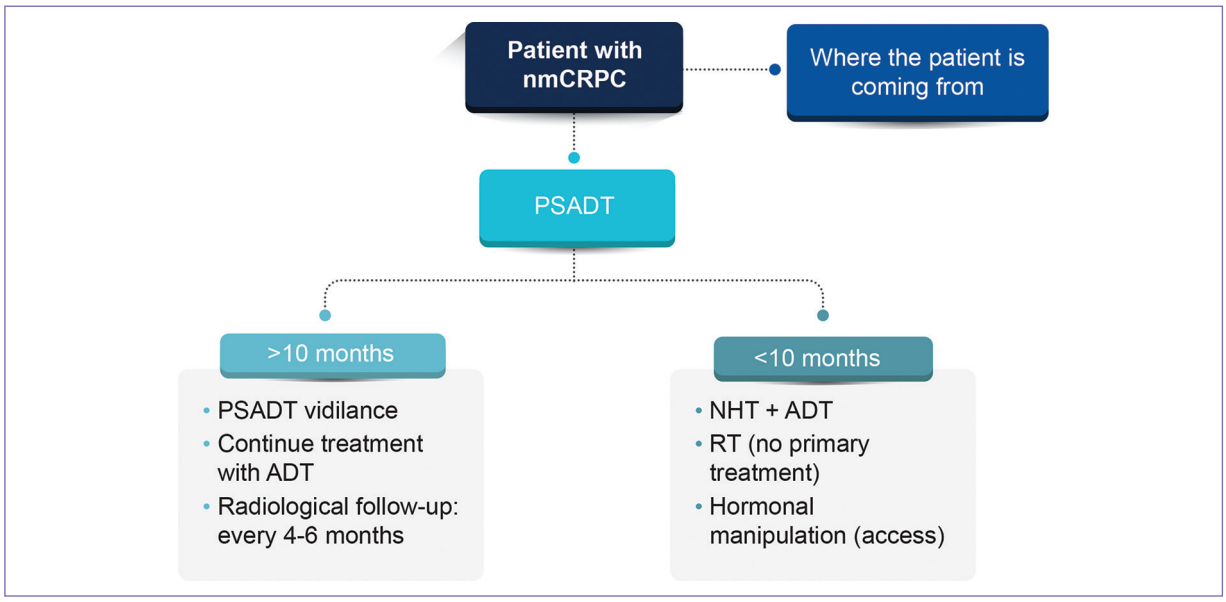


**Figure 3.** Algorithm for nmCRPC management (*source: figure developed by authors*). ADT: androgen deprivation therapy; NHT *: novel hormonal therapy; PSADT: prostate-specific antigen doubling time; RT; radiotherapy.
* NHT in this setting includes apalutamide, darolutamide, or enzalutamide.

PROSPER, and ARAMIS trials, these patients present PSA levels > 2 ng/mL that increase with time and testosterone levels < 50 ng/dL. The presence or absence of metastases should be determined using conventional imaging tests (bone scan and CT scan). M0 stage in CRPC is defined by the absence of metastatic disease[21-23]. Based on the author's experience, patients with nmCRPC usually present one of these two scenarios: (a) the patient received primary treatment (RT or surgery), and this type of progression is detected during follow-up, or (b) the patient-initiated ADT without evidence of metastases. Identifying and actively reaching out to this type of patients is essential because they seldom schedule timely visits.

The NCCN and AUA/ASTRO/SUO guidelines recommend NHT (apalutamide, darolutamide, or enzalutamide) for men with nmCRPC and a high risk of disease progression[12,14]. In asymptomatic patients with PSADT shorter than 10 months, it is recommended to start NHT. For those who have not received local treatment, the recommendation is to consider RT if there is no evidence of metastases, continue ADT, and add NHT with apalutamide, darolutamide, or enzalutamide. It is recommended to obtain periodic PSAs and to calculate PSADT, as well as to monitor for adverse effects and functional status on a monthly basis. Then visits can be spread out depending on the results. Conventional radiological follow-up is recommended every 4-6 months[12,14]. Detailed management is shown in figure 3.

## Management of mCRPC

According to the experts, in CAC these patients have often been treated with ADP, the standard treatment for this disease stage, when resistance and metastases may occur.

ESMO Guidelines recommend germline testing for *BRCA2* and other DNA damage repair for all patients with mCRPC. Tumor testing for homologous recombination gene mutations and for mismatch repair deficiency should also be considered. Poly-ADP-ribose polymerase inhibitors can be considered after NHT for patients with mCRPC and *BRCA1* or *BRCA2* mutations[7].

Treatment sequential decisions will be made on a case-by-case basis, according to disease volume or risk (or both), metastases localization, ECOG PS, patient characteristics, PSADT, Gleason score, lactate dehydrogenase, alkaline phosphatase, previous treatments, patient preferences, and drug availability[7].

In accordance with the ESMO guide and the opinion of experts, patients with asymptomatic or minimally symptomatic mCRPC should initiate treatment with abiraterone, enzalutamide, or sipuleucel-T if not received before. For patients presenting good general health

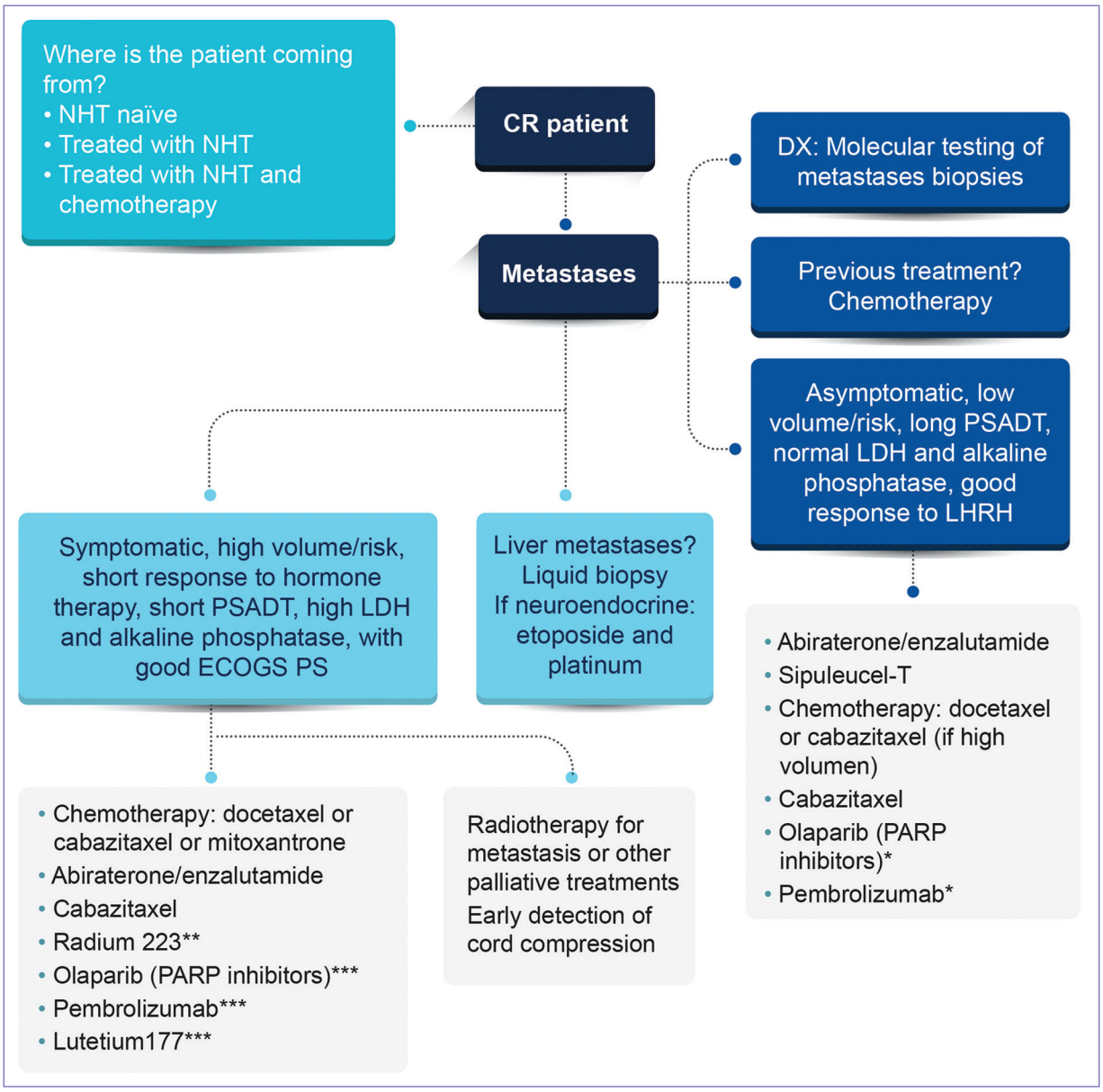


**Figure 4.** Algorithm for nmCRPC management (*source: figure developed by authors*). ADT: androgen deprivation therapy; LDH: lactate dehydrogenase; LHRH: luteinizing hormone-releasing hormone; NHT novel hormonal therapy; PARP: poly-ADP ribose polymerase; PSADT: prostate-specific antigen doubling time; RT; radiotherapy.
*In patients with DNA repair mutations alterations.
**Highly specific indications can be followed by hormone therapy.
***Specifically selected patients, often in clinical trial contexts.

status, NHT is usually enough. Chemotherapy is suggested for high-volume PC with good ECOG PS.

Liver metastases are rare and mainly caused by castration resistance through neuroendocrine carcinoma histology (confirmed by liquid biopsy). However, chemotherapy with etoposide and platinum may be used, with a less favorable prognosis[7]. In addition, olaparib should be considered after NHT with or without prior taxane treatment for patients with mCRPC and *BRCA*1/2 alterations[13].

Chemotherapy with docetaxel is usually used as first-line therapy, followed by cabazitaxel as second-line (more expensive and higher toxicity)[20]. Although 10 cycles of chemotherapy are suggested in main trials, it is

important to observe limiting toxicities and the impact on the patient's quality of life to define when to interrupt/stop this treatment strategy[19].

If the ECOG PS is low, cabazitaxel is not an option, and participation in clinical trials may offer viable treatment opportunities. Based on the experts' opinion, in the case of patients who have previously received apalutamide, they may be treated with chemotherapy followed by abiraterone, radium-223 (bone metastases without visceral metastases), or mitoxantrone (pain relief). For patients with CRPC bone metastases and risk of clinically significant skeletal-related events, bisphosphonates, or denosumab is recommended. Some clinical trial drugs used in the region are pembrolizumab, used as first-line treatment in symptomatic patients and indicated for patients with microsatellite instability (< 5% of tumors) and genetic mutations, and sipuleucel-T, with the disadvantages of a high cost and benefit of only 4.1 months[20]. Lutetium 177, a radiopharmaceutical that delivers beta radiation to PSMA-positive cells, is not currently available in CAC.

Management of mCRPC is summarized in figure 4.

## Follow-up and progression

Based on their clinical expertise, experts consider that hormone therapy has a response rate of 18-24 months; only 20% of patients respond by 5 years. Elderly patients who decide to stop treatment after 5 years and resume it years later due to PC progression respond again to hormone therapy, reaching 10 years of treatment.

ESMO guidelines encourage doing weight-bearing exercise, quit smoking, and reducing daily alcohol intake. When prescribing ADT, osteoporosis prevention should be considered and patients should receive calcium and Vitamin D, as well as a recommendation for isometric workouts. The patient's bone health should be assessed through a bone density scan. An oral dose of bisphosphonates (denosumab or zoledronate) can be prescribed for osteopenia or osteoporosis[7]. Guidelines also recommend prescribing a single EBRT fraction for palliation of painful, uncomplicated bone metastases. Urgent MRI of the spine is strongly recommended by experts to early detect cord compression in men with vertebral metastases and neurological symptoms. If the patient presents lumbar pain, muscle weakness in lower limbs, or other neurological symptoms, they should be referred to a radiotherapist or surgeon, before paralysis occurs[7].

## Conclusions

PC is a highly heterogeneous cancer with increasing incidence, multiple management options, and differential access to treatment in the region. Due to the lack of evidence of an optimal treatment sequence for this condition, these guidelines are based on technical and clinical experience, and they allow us to homogenize current knowledge, focusing on patients' needs and adapting the guidelines to the context of CAC countries.

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## Conflicts of interest

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## Ethical disclosures

**Protection of people and animals.** The authors declare that no experiments have been carried out on humans or animals for this research.

**Data confidentiality.** The authors declare that no patient data appear in this article. Furthermore, the authors have recognized and followed the recommendations according to the SAGER guidelines depending on the type and nature of the study.

**Right to privacy and informed consent.** The authors declare that no patient data appear in this article.

**Use of artificial intelligence to generate texts.** The authors declare that they have not used any type of generative artificial intelligence in the writing of this manuscript or for the creation of figures, graphs, tables, or their corresponding captions or legends.

## References


1. International Agency for Research on Cancer. Latest Global Cancer Data: Cancer Burden Rises to 18.1 Million New Cases and 9.6 Million Cancer Deaths in 2018. Report No: 263. Available from: https://www.iarc.who.int/wp-content/uploads/2018/09/pr263_e.pdf [Last accessed on 2023 Aug 16].
2. Tian JY, Guo FJ, Zheng GY, Ahmad A. Prostate cancer: updates on current strategies for screening, diagnosis and clinical implications of treatment modalities. Carcinogenesis. 2018;39:307-17.
3. García-Perdomo HA, Zapata-Copete JA, Sánchez A. Una mirada global y actualizada del cáncer de próstata. Rev Fac Med. 2018;66:429-37.
4. International Agency for Research on Cancer. Prostate. GLOBOCAN 2020. Available from: https://gco.iarc.fr/today/data/factsheets/cancers/27-Prostate-fact-sheet.pdf [Last accessed on 2023 Aug 16].
5. Manera K, Hanson CS, Gutman T, Tong A. Consensus methods: Nominal group technique. In: Liamputtong P, editor. Handbook of Research Methods in Health Social Sciences. 1st ed. Singapore: Springer; 2019.
6. McMillan SS, King M, Tully MP. How to use the nominal group and Delphi techniques. Int J Clin Pharm. 2016;38:655-62.
7. Parker C, Castro E, Fizazi K, Heidenreich A, Ost P, Procopio G, et al. Prostate cancer: ESMO clinical practice guidelines for diagnosis, treatment and follow-up. Ann Oncol. 2020;31:1119-34.
8. Tourinho-Barbosa RR, Pompeo AC, Glina S. Prostate cancer in Brazil and Latin America: epidemiology and screening. Int Braz J Urol. 2016;42:1081-90.
9. Cuentas-Jara M, Goicochea-Lugo S, Delgado-Flores CJ, Romero-Robles MA, Taype-Rondan A, Cordier-Mariaca A, et al. Guía de práctica clínica para el tamizaje, diagnóstico y tratamiento inicial de cáncer de próstata localizado y localmente avanzado en el Seguro Social del Perú (EsSalud). Rev Cuerpo Méd Hosp. 2021;14:195-206.
10. Ruiz-López AI, Pérez-Mesa JC, Cruz-Batista Y, González-Lorenzo LE. Actualización sobre cáncer de próstata. Correo Cient Méd. 2017;21:876-87.
11. Sierra MS, Soerjomataram I, Antoni S, Laversanne M, Piñeros M, De Vries E, et al. Cancer patterns and trends in Central and South America. Cancer Epidemiol. 2016;44 Suppl 1:S23-42.
12. Schaeffer EM, Srinivas S, Adra N, An Y, Barocas D, Bitting R, et al. NCCN guidelines® insights: prostate cancer, version 1.2023. J Natl Compr Canc Netw. 2022;20:1288-98.
13. Fizazi K, Gillessen S. Updated treatment recommendations for prostate cancer from the ESMO clinical practice guideline considering treatment intensification and use of novel systemic agents. Ann Oncol. 2023;34:557-63.
14. Lowrance W, Dreicer R, Jarrard DF, Scarpato KR, Kim SK, Kirby E, et al. Updates to advanced prostate cancer: AUA/SUO guideline. J Urol. 2023;209:1082-90.
15. Hahn AW, Higano CS, Taplin ME, Ryan CJ, Agarwal N. Metastatic castration-sensitive prostate cancer: optimizing patient selection and treatment. Am Soc Clin Oncol Educ Book. 2018;38:363-71.
16. ECOG-ACRIN Cancer Research Group. CHAARTED: ChemoHormonal Therapy Versus Androgen Ablation Randomized Trial for Extensive Disease in Prostate Cancer. Report No: NCT00309985. Available from: https://clinicaltrials.gov/ct2/show/NCT00309985 [Last accessed on 2023 Aug 11].
17. Smith MR, Hussain M, Saad F, Fizazi K, Sternberg CN, Crawford D, et al. Darolutamide and survival in metastatic, hormone-sensitive prostate cancer. N Engl J Med. 2022;386:1132-42.
18. Fizazi K, Foulon S, Carles J, Roubaud G, McDermott R, Fléchon A, et al. Abiraterone plus prednisone added to androgen deprivation therapy and docetaxel in de novo metastatic castration-sensitive prostate cancer (PEACE-1): a multicentre, open-label, randomised, phase 3 study with a 2 × 2 factorial design. Lancet. 2022;399:1695-707.
19. Sasse AD, Dos Reis RB, Mendes Nogueira L, Cotait Maluf F, Herchenhotn D, Smaletz O, et al. Second Brazilian consensus on the treatment of advanced prostate cancer: a SBOC-SBU-SBRT panel review. Int Braz J Urol. 2019;45:449-58.
20. Parker CC, James ND, Brawley CD, Clarke NW, Hoyle AP, Ali A, et al. Radiotherapy to the primary tumour for newly diagnosed, metastatic prostate cancer (STAMPEDE): a randomised controlled phase 3 trial. Lancet. 2018;392:2353-66.
21. Smith MR, Saad F, Chowdhury S, Oudard S, Hadaschik BA, Graff JN, et al. Apalutamide treatment and metastasis-free survival in prostate cancer. N Engl J Med. 2018;378:1408-18.
22. Sternberg CN, Fizazi K, Saad F, Shore ND, De Giorgi U, Penson DF, et al. Enzalutamide and survival in nonmetastatic, castration-resistant prostate cancer. N Engl J Med. 2020;382:2197-206.
23. Fizazi K, Shore N, Tammela TL, Ulys A, Viaters E, Polyajov S, et al. Nonmetastatic, castration-resistant prostate cancer and survival with darolutamide. N Engl J Med. 2020;383:1040-9.