THEIR CANCER GARDEN

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## EDITORIAL

 **AJULYONEBRAIN**   **CANCER?**

As is well known, on July 14, 1789, the storming of the Bastille took place in Paris, with the end of the old regime and the beginning of the French Revolution (here the glorious Marseillaise could sound). In 1790, French citizens celebrated national reconciliation.

Similar airs sound in prostate cancer (CP). Modernity advances unstoppable. For example.

1. Active surveillance in CP makes its way as the first option in very low-risk CP. The psychological support of the patients who choose it is a necessity of the first order.
2. The liquid biopsy opens an avenue
3. Genetic tests in women, who of course do not suffer from CP, allows, among other things, to facilitate special and early care of their children and grandchildren when their mother or grandmothers have certain genetic changes that increase, in males, the risk of CP. And, at the same time, it opens an early door to its prevention and early diagnosis.
4. Artificial Intelligence shows great potential to improve the diagnosis of CP, improve the determination of the Gleason grade and collaborate in developing countries , where the lack of enough pathologists is evident. The PANDA project is the first and encouraging response in this regard.

On the other hand, we draw attention to another positive fact: the progressive increase in the

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 incidence of coming testicular cancer

extraordinarily precozeincruento of possible metastases.

Since 1970, it tends to decline.

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## DOES THE INCIDENCE OF TESTICULAR CANCER DECREASE?

Testicular cancer (CT) is the cancer most commonly diagnosed in young adults. Fortunately, its curability rates are very high. Perhaps more worrying was the continued increase in its incidence since 1970. This phenomenon was more visible in Caucasian men. The causes of this increase are unknown.

Reese and collaborators, from ruhr Bochum University, (university located in the Ruhr region, Germany. It was founded in 1962 and began its activities in 1965, being the first new German public university after the end of the Second World War), published the results of a study on the incidence of TC.

It shows, especially in the USA, that the incidence of TC has been increasing progressively since 1970.

And perhaps another fact of great interest is that the increase was not only observed in white men, traditionally more affected by TC than men of other ethnicities, but that, at present, the TC increased in All Peo men, from 1970 the upward curve tends to flatten and therefore, to decrease the progressive increase in the incidence of this cancer.

According to data from the American Cancer Society, in 2021 9,470 cases of CT were diagnosed in the USA, mostly seminomas. Some 440 men would have died from it. In fact, CT is not very common and is suffered by one in 230 men. The average age is 33 years at the time of diagnosis. However, 6% is diagnosed in children and adolescents, while 8% occurs in people over 55 years of age. As we said, the prognosis is very good since it is estimated that 1 of each die from its cause

5,000 men.

A hopeful fact is that the curves of increased incidence of TC tend to decrease lately. Let's look forward to future results.

We would not like to end this note without acknowledging the merit of the Bochum University which, in 1981, awarded the recently deceased Desmond Tutu the degree of honorary doctor by that university. And that happened before Tutu became archbishop and received the Nobel Peace Prize. Type of recognition that in these parts are usually granted for strange reasons.

##  LOCALLY ADVANCED PROSTATE CANCER : DEFINITION AND TREATMENT OPTIONS

Locally advanced CP comprises various T3 or T4 situations, where the CP may have spread and affected

\*The capsule of the prostate or outermost layer of the prostate (T3a).

\*The seminal vesicles, two glands located behind the prostate and that store semen (T3b).

\*Lymph nodes near the prostate (N1)

\*Urinary bladder (T4)

\*Straight (T4)

\* Prostate wall (T4)

Such a diversity of situations means that, when treatment is reached, it must be personalized on a case-by-case basis.

Treatment options. They are as follows:

\*External or internal radiotherapy , associated with hormonal treatment (see below).

\*Hormone treatment only .

\*Prostatectomy, associated with radiotherapy, hormone treatment or both.

\*Wait and see (which is very different from active surveillance).

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Directions. They are as follows:

In T3 cases, the cure rates are similar with radiotherapy and prolonged hormone therapy or with surgery (prostatectomy) with or without radiotherapy, with or without hormonal treatment.

In T4, the most commonly used treatment is the association of radiotherapy followed by hormonal treatment.

Hormone therapy alone would in any case be indicated in elderly people.

Another option, wait and see.



To purchase the book click [**aqui**](https://www.amazon.com/C%C3%81NCER-PR%C3%93STATA-HETEROS-BISEXUALES-Spanish-ebook/dp/B08QRZ3XNJ)

# TWO REASONS WHY WOMEN SHOULD BE TESTED FOR CARRIERS OF THE GENOMIC MODEL OF PROSTATE CANCER

 True, women cannot develop prostate cancer (CP), but Dr. Peterson gives us two good reasons to be tested for the gene that predisposes to the development of CP in their children and/or grandchildren.

 Dr. Caroline Peterson (director of the Cancer Screening and Prevention program at the Kettering Health program in Washington) offers women two reasons for this:

1. Your child or grandchild may inherit a gene that indicates an elevated risk of developing CP. You will not, of course, develop this cancer, but you can pass the risk on to your immediate offspring.
2. Genes that predispose to CP may also indicate an increased risk of developing breast or ovarian cancer by the woman herself.

 Dr. Peterson and her team study patients' family history to estimate the risk that they carry the gene. Currently, up to 36 genes can be detected, of which 14 indicate the genetic risk of developing CP.

But these 14 genes also warn about other hereditary cancers (breast, ovary, colon, uterus, pancreas and melanoma).

As Dr. Peterson does, we must distinguish the presence of the BRCA 1 and BRCA 2 genes in men or women.

Men with BRCA 1 and BRCA 2 positive have an increased risk of CP, breast and pancreatic cancer. But some of these genes also increase the risk in their female relatives of developing breast, ovarian, or colon cancer.

The HOXB13 gene. If a woman is a carrier of this gene, it tells us that she can have it without any specific health problems. But if you pass it on to your male children or grandchildren, they may be at higher risk for CP. Even her father, that of the carrier woman, may have it and have passed it on to his daughter. And every man who knows that he has inherited this gene can, should, be subject to early surveillance in case he develops CP.

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 Today a new and magnificent stage is opening in the prevention and early diagnosis of cancer in general and in that of the CP in particular. Genetic testing allows for very early warning. If so far we have suffered from poor cancer prevention (apart from the usual negative economic interests, for example, tobacco, junk food, etc.), now things can change significantly for the better.

We would not like to end without paying tribute to our dear colleague and friend, vice president of FEFOC, **Dr. Elías Valverde Llor,** who for years had the vision of the importance of genetics in CP.

# LIQUID BIOPSY, NON-INVASIVE DIAGNOSIS OF PROSTATE CANCER METASTASES

Sometimes patients with apparently localized prostate cancer (PC) do not respond to treatment and soon develop or are developing metastases, hitherto impossible to diagnose. But liquid biopsy, study of tumor traces in the patient, is a bloodless means (you do not have to open or cut, just extract a little blood, saliva or urine), which allows a very early diagnosis of possible metastases.

Liquid biopsy is a non-invasive diagnosis that makes it possible to diagnose circulating cancers.



 Liquid biopsy

Fluid is not only obtained from blood, but also from urine and saliva. In the present case , the samples were extracted from the blood of the patients

Dillinger T and collaborators from the Medical University of Vienna, Austria, publish in the journal Molecular Cancer an important study in which they show how they identify fragments of tumor DNA from patients with CP, circulating in their blood.

 They use liquid biopsy to study these circulating fragments.

We are therefore facing a remarkable advance. That will allow very early treatments in cases of resistance to usual treatments or suspicion of metastasis. It may also be used in the assessment of response to hormonal or chemotherapeutic treatment.

#  PATHOLOGY OF PROSTATE CANCER

 When biopsy samples for the diagnosis of prostate cancer are studied under a microscope, several changes can be found. They are as follows:

* 1. PIN (intraepithelial neoplasia of the prostate) is a lesion that may be precancerous. There are two types of PINs, one with few alterations from the normal ones (or low-grade PINs); another with very altered cells and different from normal cells (high-grade PIN ).

Between 30 and 40% of the latter, high-grade PINs, are precursors of CP. If diagnosed, their evolution is followed very closely, through biopsies and multiparametric nuclear resonance, because the risk of developing CP is very high. As for low-grade PINs, they do not usually represent problems during the life of the person affected.

The causes of PINs are unknown to date. When we diagnose a CP it is possible that, in addition, PINs are found that have not

produced symptoms.

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* 1. ADENOCARCINOMA. It is the most common of the PCs (90%). It develops from the glandular cells of the prostate. Most adenocarcinomas have very slow growth and do not tend to extend beyond the gland. But others, on the other hand, tend to grow rapidly.

The remaining 10% of CPs consist mainly of six other types:

The first is ductal adenocarcinoma, which forms in the cells of the ducts (ducts) of the prostate. It grows faster than glandular adenocarcinoma. It is not very sensitive to hormonal treatment, so its treatment is based on surgery and chemotherapy.

 The transitional, also called urothelial cancer, is found in cells near the urethra. However , it is more common for this type of cancer to start in the urinary bladder and invade the prostate. It is treated with surgery and/or chemotherapy.

Squamous cell carcinoma develops in the fat cells that line the prostate. It is fast-growing, usually diagnosed in advanced stages. It is treated following the general lines of glandular adenocarcinoma.

Carcinoid forms in the nerve tissue of the prostate. Its growth is very slow. If it does not give symptoms it is not usually treated. If, on the other hand, you give them, you are a candidate for surgery.

Sarcoma forms from the muscle cells of the prostate. Fast growing and surgical treatment.

Small cell carcinoma , fast-growing and difficult to diagnose early, as it does not raise the PSA level. Surgical treatment.

1. ASAP. They stand for "atypical small acinar proliferation". A biopsy has been performed and cancer cells are found under the microscope, but there are very few, so making a diagnosis of cancer is not easy In these cases a new biopsy is usually recommended in some

months.

1. PIA (proliferative inflammatory atrophy): The cells of the prostate are smaller than normal and signs of inflammation are associated in the biopsied area. PIA is not cancer, but it is thought to be a precursor to high-grade PIN and cancer risk.



To purchase the book click [**here**](https://www.amazon.es/PROSTATE-CANCER-HETEROSEXUAL-BISEXUAL-English-ebook/dp/B09928PCRJ/ref%3Dsr_1_1?__mk_es_ES=%C3%85M%C3%85%C5%BD%C3%95%C3%91&crid=23MRRAZCCJ9RE&keywords=prostate%2Bcancer%2Bin%2Bheterosexual%2C%2Bgay%2Band%2Bbisexual%2Bmen&qid=1643539883&sprefix=prostate%2Bcancer%2Bin%2Bheterosexual%2Bgay%2Band%2Bbisexual%2Bmen%2Caps%2C75&sr=8-1)

# ARTIFICIAL INTELLIGENCE CAN IMPROVE THE DIAGNOSIS AND GRADE OF PROSTATE CANCER

Kimmo Kartasalo and collaborators, from the Department of <Medical Epidemiology and Biostatistics of the Karolinska Institutet, Stockholm, Sweden, together with several international collaborators have completed an important study in which artificial intelligence (AI) was validated in the diagnosis and graduation of prostate cancer (CP) or Gleason grade \*. The results were published in the journal Nature Medecine (January 13, 2022). This journal publishes research results that address the needs and goals of medicine.

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AI applied to Medicine offers the possibility of reshaping many aspects of Medicine, while at the same time it can greatly improve the experiences of doctors and patients.

This study shows that AI systems can identify and graduate tissue samples from patients with CP, samples that came from various countries. The international validation took place within a system called PANDA (from Prostate cANcer graDe Assesment), which brought together 1290 AI experts who were challenged to rapidly develop systems that would establish the grade of PCs with great precision... To do this, they used 10616 digitized prostate biopsies.

Today a current problem in the diagnosis of CP is that different pathologists can reach different conclusions regarding the same pathological tissue samples. This can negatively influence the therapeutic decisions that are made on different bases by clinicians. Evaluations are still subjective, so many variations in valuation are observed, which can translate into an undervaluation (Gleason below what it really is) or supra valuation (Gleason above its reality). In any case, it would result in treatments by default or by excess.

The researchers believe that AI has enormous potential to improve these assessments , although many problems in its use still need to be solved.

The evaluation of CP biopsies using AI has great potential to improve the quality of diagnosis at a lower cost than the current one. It's not about AI replacing pathologists, but acting as a valuable complement to prevent diagnoses from escaping and aiding in accuracy by establishing Gleason's grade. And it can also be an important help in developing countries, where there is a great shortage of pathologists.

### \* GLEASON GRADES

 Grade 1: Gleason of 6 or less (low activity CP)

Grade 2\*: Gleason of 3+4=7 (INTERMEDIATE AGGRESSIVENESS CP )

Grade 3\*: Gleason of 4+3=7 (CP of intermediate aggressiveness)

Grade 4\*: 8 Gleason (High Grade CP ) Grade 5\*: Gleason 9 to 10 ( High Grade CP )

Taken from the book "Prostate Cancer in Heteros, Gays and Bisexuals", by FEFOC.



We attach a copy of the invitation to attend the screening of a film documentary about Professor Jordi Estapé.

Given the limitations of the pandemic, we need you, if interested, to confirm your attendance at: **documentalesta** **pe@gmail.com.** If you wish to be accompanied , you must also state the details of each of your companions.

Hoping to greet them on February 8. Receive an attentive greeting,

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 **Prostate Cancer Video**  Collection





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