

Prostate Cancer Screening in Greece

Current Facts

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Introduction: The purpose of the current article is to summarize the existing literature focusing on the current status of prostate cancer screening behaviour in Greece.

Materials and Methods: We identified studies published from 2000 onwards by searching the MEDLINE database of the National Library of Medicine. Initial search terms were *prostate-specific antigen screening*, *prostate cancer screening*, and *Greece*. Bibliographic information of the selected publications was checked for relevant publications not included in the MEDLINE search.

Results: Currently in Greece, there is no official recommendation for prostate cancer screening, and thus, its practice depends on the social and educational status of the patient and where the patient lives in Greece.

Conclusion: We conclude that patients should be thoroughly informed of the limitations of prostate cancer screening by prostate-specific antigen test, and in consultation with urological specialists, make their personal decision of whether to receive it. Therefore, a project to support shared decision-making and informed choice for men considering testing for prostate cancer should be undertaken.

Keywords: prostatic neoplasms, early detection of cancer, mass screening, prostate-specific antigen

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INTRODUCTION

Prostate cancer is the most frequent cancer among men in the western world and the second leading cause of cancer death in this population after lung cancer.⁽¹⁾ Unless in cases of urinary tract obstruction, metastases, and related disorders which occur in advanced disease, prostate cancer is usually asymptomatic; therefore, efforts to reduce the mortality of the disease are based on earlier diagnosis and treatment. The primarily available tests to detect prostate cancer include digital rectal examination (DRE) and the serum prostate-specific antigen (PSA) test. At the

moment, there is no single effective screening test for early diagnosis of prostate cancer in apparently healthy men; neither the PSA test nor the DRE is 100% accurate.

Comparisons of screening tests carried out on asymptomatic patients showed that an elevated serum PSA level is much more sensitive than DRE.⁽²⁾ In general, the higher the PSA level, the more likely there is a malignant tumor in the prostate, and also, the higher the PSA level in one with prostate cancer, the more likely that the cancer has spread. However, PSA levels alone do not

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give enough information to distinguish between benign prostatic conditions and cancer. In fact, the level of PSA may also be high in men who have an infection or inflammation of the prostate or benign prostatic hyperplasia. Other factors that go into interpreting PSA scores include age and size of the prostate. Another drawback is that PSA itself cannot tell how dangerous the cancer is that some prostate cancers, particularly those of an aggressive nature, may not produce much PSA. Herein, we reviewed the current knowledge and experiences in prostate cancer screening and its outcomes in Greece.

MATERIAL AND METHODS

We identified studies published from 2000 onwards by searching the MEDLINE database of the National Library of Medicine. Initial search terms were *prostate-specific antigen screening*, *prostate cancer screening*, and *Greece*. Bibliographic information in the selected publications was checked for relevant publications not included in the MEDLINE. All retrieved publications were reviewed in an attempt to scrutinize the current status of screening programs of prostate cancer in Greece.

RESULTS

In Greece, there is currently no official recommendation on prostate cancer screening, and it is being performed unofficially in patients visiting outpatient departments of most Greek hospitals, as well as in men visiting consulting rooms.⁽³⁾ Actually, patient's anxiety increases the likelihood of taking the screening test, by influencing the decisions of physicians, whose clinical judgment would otherwise make them least inclined to order the test.⁽⁴⁾ It is also notable that a general practitioner, a family doctor, or an internist requests most of the PSA tests.⁽⁵⁾ The exact magnitude of this opportunistic screening is not known; however, according to the official reports of the Ministry of Public Health, 31% of men between 45 and 54 years of age and more than 50% of men older than 65 years undergo serum PSA test yearly.⁽³⁾ Due to the geographical peculiarity of our country, it is hard to conclude that PSA screening implementation has had any

effects in prostate cancer mortality.⁽³⁾ In fact, more than half of the country's population live in 2 large urban areas (Athens in the Southern and Thessaloniki in the Northern Greece), while the remaining live in small towns and in rural or isolated areas, having different levels of access to the health services, and consequently, different screening behavior. The prevalence of unofficial prostate cancer screening with PSA serum examination has been estimated to be extremely high in the abovementioned urban areas. In contrast, overall prostate cancer screening is rarely practiced in rural and isolated areas.⁽³⁾ Indeed, most hospitals are located in the 2 larger cities, while only primary healthcare settings exist in rural and/or isolated areas. Moreover, wide fluctuations exist in the distribution and the availability of healthcare services between different—even neighbouring—regions of Greece, and consequently, different intensity of the PSA screening is conducting in various regions.⁽³⁾ In rural and isolated areas where a patient would never visit a physician, unless being symptomatic, the overall number of PSA measurements is low. This results in a dramatic increase of healthcare costs and/or a possible high rate of overtreated premalignant conditions and cancers in urban areas, while in rural areas, the diagnosis of prostate cancer is often attained at a stage when cure is not possible.⁽⁶⁾

Disparities in prostate cancer screening practices have also been noticed among men with different educational levels. A recent study demonstrated that prostate cancer screening was significantly more frequent among those with higher education. On the contrary, low-literacy populations showed low prostate cancer screening rates.⁽⁴⁾ A relation between the socioeconomic level and prostate cancer screening has also been observed, with more than 80% of men of higher socioeconomic level and less than 65% of men of median and low socioeconomic levels seeking consultation with healthcare providers.⁽³⁾ The relative percentages for PSA testing and DRE are 60.4% and 52.4% versus 19.7% and 8.2% for these two socioeconomic groups, respectively.⁽³⁾

Finally, the distribution of printed educational material on prostate cancer screening did not

seem to change Greek men's attitude regarding prostate cancer screening in favor of DRE acceptance behavior.⁽⁴⁾

DISCUSSION

From 1994 onwards, the use of the PSA testing has been approved for the detection of prostate cancer, and in consequence, it has been used widely in prostate cancer screening. Justifiable concern about overdiagnosis and overtreatment has risen since then.⁽⁷⁾ On the one hand, evidence supports the usefulness of serum PSA evaluation for the screening of prostate cancer; several studies showed an eventual increase in the prostate cancer detection rate and a shift towards earlier pathological stage and less invasive forms.⁽⁸⁾ On the other hand, there is no clear proof that the decrease in deaths of prostate cancer is due to early detection and treatment based on PSA level or due to other factors.⁽⁹⁾ Moreover, there is evidence that screening may cause overdiagnosis of slow-growing indolent cancer and may lead to unnecessary or inappropriate invasive treatment, which can have serious risks and side effects, including urinary incontinence, erectile dysfunction, and bowel dysfunction. For these reasons, screening tests for prostate cancer is still under study, and clinical trials evaluating the usefulness of prostate cancer screening are ongoing in many countries. Full results from these studies are expected in several years.

Currently, there is no standard recommendation for prostate cancer screening. Screening is presently discouraged by the European Commission's Advisory Committee on Cancer Prevention for its negative effects are evident and its benefits still uncertain.⁽¹⁰⁾ According to the US Preventive Services Task Force, evidence is insufficient to recommend in favor of or against routine prostate cancer screening in men younger than 75 years, and screening in men aged 75 years or older is not recommended.⁽¹¹⁾ Meanwhile, there are no official recommendations for prostate cancer screening provided by European Association of Urology, a member of which is the Hellenic Urologic Association.⁽¹²⁾ Even the American Cancer Society has modified its position on men eligible for prostate cancer

screening from "should undergo digital rectal examination and PSA testing annually" to "recommends that both the PSA testing and digital examination be offered annually."⁽¹³⁾ Similarly, the American Academy of Family Physicians and the US Preventive Services Task Force do not recommend routine screening in low-risk patients.⁽¹³⁾ The abovementioned professional organizations and health agencies as well as most of medical experts agree that it is important to take into account the benefits and risks of diagnostic procedures and treatment when considering whether to undertake prostate cancer screening. On the other hand, men particularly those aged older than 50 years have several reasons—the belief in the benefit of early diagnosis, the need to have trust, and a desire for reliable screening resembling those for women—to undergo routine testing for PSA.⁽¹⁴⁾ Information and decision aids have been proved to increase the patient's knowledge about prostate cancer screening, to support the physician's judgment, and to promote shared decision-making as well. Therefore, they should include the current mainstays of prostate cancer screening strategy. After all, every man can have balanced information on the pros and cons of prostate cancer screening to help him make an informed decision, while physicians who perform screening by the PSA test can maintain strong clinical acumen and judgment when deciding whom to screen.⁽¹⁵⁾

Under the light of the current knowledge, prostate cancer screening in low-risk populations is a very controversial issue. Prostate cancer risk appears to be associated with both genetic factors (ethnicity), dietary practices (fat consumption), and environmental factors (ambient sunlight exposure), and mortality rates differ between geographical regions. In several geographical regions such as the eastern Asia, where both prostate cancer incidence and mortality rates are 50 times lower than in the northern Europe and northern America,⁽¹⁵⁾ screening for prostate cancer is worthless since the disease does not constitute a serious public health problem.

Despite the fact that Greece stands in a geographical region where histological and

clinical prostate cancer is not very common,^(16,17) there is considerable demand for the PSA test amongst men worried about the disease. It is often that many men younger than 50 years and older than 70 years who are not informed about the risks and benefits of prostate cancer screening, are seeking for serum PSA examination and many of PSA examinations result from the perspective of patient's knowledge on prostate cancer. Greek men's concerns about prostate cancer are in part justifiable; however, annual prostate cancer mortality rates in Greece continued to increase despite the increased intensity of the PSA screening since 1996, when PSA examination was introduced.⁽¹⁸⁾ Although the government and medical and cancer councils have never recommended prostate cancer screening in Greece, the Ministry of Public Health is developing a national screening program targeting to decrease disparities in the screening behavior among Greeks. Under those circumstances, patient participation in prostate cancer screening decision-making will require a multidimensional approach that seeks to adequately prepare patients to participate in decision-making.

Yet, against a background of decreased enthusiasm and interest for prostate cancer screening, most of the public and private insurance companies have adopted PSA serum examination on the standard annual checkup, and this opportunistic screening significantly increases the healthcare costs. To our knowledge, men who undergo prostate cancer screening by PSA alone are exposed to the potential harms of diagnostic follow-up, which are a possible overdiagnosis of clinically insignificant prostate cancers and, if actively treated, further increase of the overall healthcare costs.

CONCLUSION

According to the perspective of the authors, patients should be thoroughly informed of the limitations of prostate cancer screening, and in consultation with urological specialists, make the personal decision of whether to receive it. Therefore, a project to support shared decision-making and informed choice for men considering testing for prostate cancer should be undertaken.

In an environment where so little is known about how such decisions are made, the above concept would be a step forward.

CONFLICT OF INTEREST

None declared.

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