

**EDITORIAL**

**PROSTATE CANCER EARLY DETECTION -  
A PUBLIC HEALTH PERSPECTIVE**

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There continue to be major public health challenges arising from the increasing tendency of cancer burden in Europe. This increase of the cancer disease number can be partly attributed to the improvement of medical technology, accumulating knowledge and new discovered tools in the domain. Cancer remains the second cause of death in Europe and prostate cancer is the third cause of death in men, after pulmonary and colorectal cancer.

The highest incidences have been reported in North America and Northern Europe and the lowest in South Asia. In the US incidence and mortality are substantially higher among African-American in all ages (1).

Over one quarter of the global burden of cancer incidence occurs in Europe, despite the fact that persons living in Europe comprise only approximately one-eighth of the world's population (2).

Prostate cancer is a cause of morbidity and mortality in men, accounting about 30% of all new cases of cancer and 14% of deaths from cancer. The incidence of the disease seems to be increasing in many countries (3).

In the past decade there has been a quiet revolution in the management of the disease in the framework of

screening, early detection and methods of treatment. In spite of increasing attention and accumulating knowledge, advances in treatment that improve survival remain elusive (4).

The lifetime risk for clinical prostate cancer is about 10% among U.S. men; approximately 3% die of this disease. Patients with symptomatic disease generally have late-stage cancer that has spread beyond the prostate capsule and is incurable (1,5).

Survival of patients who receive a diagnosis of early-stage disease is substantially better than that of patients who receive a diagnosis of late-stage disease (1,7).

If digital rectal examinations (DRE) and measurements of prostate-specific antigen (PSA) are used to screen men who are asymptomatic or those who have symptoms that are consistent with benign prostatic hyperplasia, the disease is diagnosed earlier and the proportion of cases that are discovered while the cancer is still confined to the prostate is increased. This so-called stage shift has generated considerable advocacy for the methods that result in early detection (8,9).

The tendency toward earlier clinical stage detection is reflected by the

growing use of PSA measurement as a detection method (7,10,11).

Risk factors for prostate cancer have recently been reviewed. Age remains the most powerful risk factor. Depending on the number of first-degree relatives with prostate cancer, family history may increase a man's risk twofold to fivefold. The incidence in black men is as much as 1.6 times the incidence in white men. Whether a previous vasectomy increases a man's future risk is controversial. A high-fat diet may also increase risk (4,5,6).

The existence of associations between perinatal factors and prostate cancer indicate that early life is important in the long carcinogenesis process (6). Some authors have shown that a phenomenon affecting factors that controlling genetic susceptibility could explain the high mutation rate responsible for the genetic changes leading to cancer (12,13,14,15).

In the management of the disease, early detection is the most important, giving possibilities for treatment of the cancer in its early stages.

What is already known is that screening for prostate cancer with PSA alone is widely practiced in the US and has resulted in a remarkable increase in incidence of diagnosed disease (7,12,16). Recent reductions in prostate cancer mortality in US have been attributed to screening and treatment, raising questions about whether continuing the trials is ethics ally (7,12).

What is not known is whether randomized trials can determine the influence of early detection and aggressive treatment on the reduction of prostate cancer mortality (12).

Hanke B., Feuer E. and Etzioni R. have postulated that the decline mortality may be attributable to screening (17,18,19). The idea which is raisings from studies is that the screening for prostate cancer is an important part of cancer care which operates risk management strategies. Screening for prostate cancer, as an important part of cancer care, is aimed to diagnose the disease:

- at an early stage;
- before symptoms start;
- when it is easier to treat;
- when it is more likely to be curable.

The American Cancer Society's (ACS) current recommendations say that PSA concentration above 4.0 ng/ml but less than 10 ng/ml means a 25% chance of having prostate cancer (20). Generally speaking, the higher the PSA test level, the more likely that there is a prostate cancer. On the other site, the higher is a prostate cancer, the higher the PSA level and the higher the PSA level in someone with prostate cancer, more likely it is that the cancer has spread. Measurement of PSA is the most sensitive noninvasive test available for early detection of prostate cancer and may allow for earlier diagnosis of aggressive cancer (8). Measurement of PSA plays a potentially valuable role in prostate cancer detection because cancer tissue generates more PSA than does normal or hyperplastic tissue, and cancer tissue may disrupt the prostate-blood barrier (16). An autopsy study showed that PSA levels are consistently elevated. However, PSA levels normally increase with age.

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Screening for prostate cancer has the disadvantages of any type of screening. Thus, if prostate cancer screening was introduced, some men with cancer would be missed, other men without cancer would given tests they did not need and some men with very slow growing cancers would be given treatment they did not need. According to ACS, only 2% of the man had a false positive result - they had an abnormal PSA concentration higher than 4 ng/ml, but subsequent biopsy showed that they did not have prostate cancer (20). Gottlieb S. has shown that even if PSA is considered inaccurate by some authors, it can identify 8 of even 10 men aged less than 60 years who later have prostate cancer diagnosed (21). DRE is more sensitive for detecting cancer in the peripheral zone (the area of the gland that is closest to the examining finger) than in the deeper transition and central zones. However, in a recent cohort of cases of cancer detected by PSA measurement among patients who had had normal results of DRE, half of the detected cases were still found adjacent to the peripheral zone capsule (22). Because larger tumors are more easily palpable, it is also often assumed that DRE has a low probability of detecting insignificant, low-volume tumors.

Despite profound health, social, psychological and economic consequences of screening for prostate cancer, it is practiced alone in the US for men over 50 years old or men over 45 years thought to be at high risk of prostate cancer (23).

PSA alone is not recommended for screening in the UK because:

- men with prostate cancer may not have a raised PSA;
- 2 out of 3 men with a raised PSA do not have prostate cancer;
- there is uncertainty about the best way to treat early prostate cancer.

Pressures for the establishment of national screening programs are widespread, but there are countries seeking to learn from other's experiences (24,25). Screening of prostate cancer being of unknown clear benefit, but carrying known treatment, many members of the medical community are advising the rise of "informed consent". In this concept, the individual is provided information concerning the risks and potential benefits to allow him to make an informal decision as to whether he wishes to be tested or not. He would normally be asked to sign a document stating his decision. In other words it is a personal decision. In this sense, the American Cancer Society recommends that both PSA test and the DRE should be offered annually, beginning at age 50, to men who have at least a 10-year life expectancy and to younger men who are at risk. Information should be given to men regarding potential risks and benefits. Widespread screening for prostate cancer may result in the detection of large numbers of malignancies whose future effects on morbidity and mortality are unpredictable.

Men, whose screening results are positive, are faced with the very difficult decision of whether or not to submit to curative therapy, such as

radical prostatectomy or radiation treatment and their accompanying risks, which include incontinence, impotence and other complications (26).

American College of Physicians includes same recommendations regarding counseling patient, therefore all men who are considered having DRE and PSA measurement should understand the potential risks and benefits of screening and participate with their physicians in deciding whether to be tested. Before testing occurs, patients should be fully informed about the following:

- prostate cancer is an important health problem;
- the benefits of one-time or repeated screening and aggressive treatment of prostate cancer have not yet been proven;
- digital rectal examination (DRE) and prostate specific antigen (PSA) measurement can both have false-negative results;
- the probability that further invasive evaluation will be required as a result of testing is relatively high;
- aggressive therapy is necessary to realize any benefit from the discovery of a tumor;
- a small, but finite risk for chronic illness, particularly with regard to sexual and urinary function, are associated with these treatments;
- early detection may save lives;
- early detection and treatment may avert future cancer-related illness (27).

When doctors plan a screening program, they have to think about what happens when the disease they are looking for is found. Is there an effective treatment?

What would happen to those people if they were not screened?

Although there is good evidence that PSA screening can detect early stage of the disease, evidence is mixed and inconclusive about whether early detection improves health outcome (27).

In conclusions, undiagnosed prostate cancer is highly prevalent, especially among older men, that is way, management of the disease decreases more attention, especially in terms of early detection. However, evidence also indicates that available tests for early detection have limited specificity, particularly among older men who have benign prostatic hyperplasia .

Despite more controversial concerning the screening for prostate cancer, it is more important to generate a greater awareness among primary health care providers of the importance of an early detection of the disease.

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