

Screening for prostate cancer

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Prostate cancer is a common disease in the western counties, with one in seven American men getting diagnosed during their lifetime [1]. One key to cure prostate cancer is early detection, but methods today have limitations and many cancers are missed. Better and more reliable methods are needed to save lives. One new test has shown beneficial results both regarding cost and improvements in quality of life.

Prostate cancer is one of the most common cancers among men. The disease can be aggressive and lead to death if not detected in an early stage. Therefore, it is important with a reliable screening method that finds all cancer patients and to treat them before it is too late.

Screening methods are used to search through a large population to detect a specific disease at an early stage. This is currently used for both breast cancer and cervical cancer but no corresponding method exists for prostate cancer. The only available test for prostate cancer today is PSA, which is a blood test and stands for Prostate Specific Antigen. The test can give an indication of prostate cancer but is not accurate enough to be used as a widely used screening test. To make sure not to miss cancer tumors, a high number of patients are referred for biopsies. To do a biopsy, tissue is taken from the prostate to examine if it contains cancerous cells. This can lead to discomfort for the patient and in many cases the biopsy is unnecessary.

New tests can help doctors to stratify patients to biopsy. An evaluation of a number of new existing tests showed that they could improve the process of detecting and diagnosing prostate cancer. Evaluation was done for tests both for screening and for after a negative biopsy. The assessed screening tests were 4Kscore, PHI, MRI and Prostarix. The corresponding tests after a negative biopsy were 4Kscore, PHI, PCA3, ConfirmMDx and PCMT. All tests are new and are currently being evaluated for their usefulness.

4Kscore, which is a blood test, showed promising results. It showed potential both to lower the costs and to increase the quality of life for the patients compared to the currently used methods.

Data about the usefulness of the tests was collected from all relevant articles found regarding the tests. To identify the usefulness, the data was used in a model to calculate the costs of using the tests and how it would affect the quality of life of the patients.

The tests were compared to the current method, with PSA tests and biopsies with ultrasound, and a newer method using MRI to detect the tumor and to guide the biopsy. Compared to the current method both 4Kscore and PHI showed better results while ConfirmMDx and PCA3 showed equal results to the method. Only 4Kscore showed better potential than the method using MRI.

These results show that the tests should be researched further. Each of the tests could be a possible compliment to the current methods to detect a higher amount of prostate cancers.

References

- [1] David Bayliss, Jed Duff, Philip Stricker, and Kim Walker. Decision-making in prostate cancer - choosing active surveillance over other treatment options: A literature review. *Urologic Nursing*, 37(1):15–22, 2017.