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Journal of the Faculty of Medicine Baghdad
Print ISSN: 0041-9419, Online-ISSN: 2410-8057
DOI: https://doi.org/10.32007/jfacmedbaghdad.6643020
Letter to the Editor

Prostate cancer screening; is it recommended in 2024?

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As we are living the month of Men's Health awareness, November, we thought of touching base regarding screening for prostate cancer; an intriguing topic indeed, and the jury is out as of yet regarding whether to formalize a screening platform for prostate cancer. The fact remains that prostate cancer is one of the most common cancers in men and the fifth leading cancer-related death globally (1).

However, it remains to be determined whether mass screening is recommended for such an important health issue.

Over the past few decades, the pendulum has swung with many trials attempting to come up with the sensible conclusion as to whether screening is recommended for prostate cancer.

For screening for any medical condition to be effective according to Wilson and Jungner criteria, the condition has to constitute an important health problem with no natural history. Also, it has to have a recognizable latent or early symptomatic stage (2).

More importantly, there has to be an easy, reliable, and acceptable test for the screening along with an acceptable treatment. Speaking of which, the treatment has to be effective, especially if commenced early.

When it comes to prostate cancer, it ticks most of the boxes regarding this criteria, especially when it comes to knowing the natural history of the disease.

We know for a fact that prostate cancer has a wide spectrum of pathology ranging from the low risk that in many cases does not require any intervention, and active surveillance or watchful waiting would be the way to go. On the other end of the spectrum, there are the aggressive cancers of the prostate that require immediate attention.

If we look into the incidence of prostate cancer per hundred thousand males all around the world, the United States of America will be at the top of the list with the highest incidence and very low mortality. If we compare that with another country like Zimbabwe, the observer would see that the incidence is a quarter of that in the United States; however, the mortality is slightly higher. In other words, almost every single man diagnosed in Zimbabwe with prostate cancer will eventually succumb to the disease (3).

There are two possible conclusions to draw from this observation: either the healthcare system in the United States is so brilliant that prostate cancer cases are diagnosed very early and mortality is low! The other explanation, which is probably more plausible, is the over diagnosis of prostate cancer.

So what if there was an over diagnosis of cancer cases of the prostate? An audit carried out in Belfast City Hospital a few years back showed that of 470 low-risk prostate cancer patients on active surveillance, 17% decided to go for intervention simply because of anxiety (unpublished series).

Therefore, in order to draw a conclusion about whether or not the screen for prostate cancer, it would be worthwhile looking into two famous prospective randomized controlled trials.

Let's take the American one first: Prostate, Lung, Colorectal, Ovarian Trials (PLCO): This trial recruited 77,000 men aged between 55 and 74 years. Those were equally divided into two groups of 38,500 men in each. Men in the control arm were to be tested at the start and end of the trial. The screening arm men would be involved in an annual PSA and digital rectal examination (4).

At the end of 10 years, followed by secondary analysis at 13 years, the prostate cancer incidence was 4250 men in the screening arm as opposed to 3815 men in the control arm, with a relative risk of increase of detection of only 12%. Therefore, the trial concluded that screening is not important for prostate cancer.

However, a major drawback of this trial was the significant contamination of around 50% of men in the control group jumping across and into the screaming arm to get their PSA checked! This has contributed to the under powering of the trial.

At about the same time, the European Randomized Study of Screening for Prostate Cancer (ERSPC) recruited 182,000 men aged between 50 and 74 years, equally divided into two groups containing 91,000 men each.

The screening arm subjects were offered digital rectal examination and PSA every four years. At the end of

the first analysis at nine years, the cancer incidence in the screening arm was 8.2% as opposed to 4.8% in the control arm.

This has shown 20% less mortality with screening. However, it also concluded that in order to save one life, around 1500 men would have to be screened, and 48 would have to be treated. These results did not support screening as a justifiable tool for prostate cancer prevention (5).

However, the Europeans persevered with collecting data from the ERSPC recruits, and with time, the numbers needed to screen dropped to 979 men at 11 years, then 781 men at 13 years, eventually dropping to 570 men at 16 years after the initial trial. Similarly, the numbers needed to treat dropped from 48 men at 9 years to 35 men at 11 years, then 27 men at 13 years, and eventually 18 men at 16 years.

Despite the fact of comparing different pathologies, if we compare that to other cancers, we will see that the numbers needed to screen are much higher in cervical cancer (n = 2250 women), colorectal cancer (n = 1250 people), and breast cancer (n = 465 women).

With these updated numbers, prostate cancer screening might be justified in certain circumstances. Therefore, I would conclude this editorial by saying that for mass prostate cancer screening, over-detection still weighs marginally against the benefit. However, targeting high-risk populations would undoubtedly increase the benefits of screening.

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