

A Test for Prostate Cancer with Better Sensitivity and Specificity

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Technology description

Summary

In the US, prostate cancer is the most common type of cancer in men. Prostate cancer is aggressive in some men while it is more slow-growing and less problematic in others. Most men nowadays are diagnosed with prostate cancer earlier than before, when the disease is diagnosed in a non-metastasized form. This is due to the wide-spread use of tests such as the serum prostate-specific antigen (PSA) at earlier stages. However, as elevated serum PSA levels may be due to non-cancerous conditions such as benign prostate hyperplasia (BPH), acute urinary retention, perineal trauma, and prostatitis, this test is not very specific for the detection of prostate cancer. Furthermore, increased levels due to these conditions may mask PSA originating from any small cancer foci.

Taken together, these reasons may be responsible for low levels of sensitivity and specificity of PSA tests. Hence, the risk for prostate cancer can be present at a wide range of serum PSA levels. As a consequence, men with elevated serum PSA must undergo biopsies to further confirm or rule out the presence of prostate cancer. Given that 1 million men with elevated serum PSA tests undergo biopsies annually, but only 25% of these are diagnosed with cancer, a more sensitive and specific test would be significantly beneficial.

Invention

Dr. Shuk-mei Ho and colleagues at the University of Cincinnati have designed an assay which provides greater diagnostic accuracy than the PSA test. It also has better sensitivity and specificity than that of many other commercially available tests involving other biomarkers. This assay has been tested in a study comprising of 92 patients. The sensitivity and specificity of this test was 81% and 84% respectively.

Advantages

Is potentially simple to perform

Is non-invasive and does not require blood draw

Has higher sensitivity and specificity compared to many tests currently available

Can potentially be used to rule out unnecessary, painful follow-up biopsies especially in older patients (70+ yrs)

Institution

[University of Cincinnati](#)

联系我们



叶先生

电话 : 021-65679356

手机 : 13414935137

邮箱 : yeyingsheng@zf-ym.com