



Image Analysis of Histologically Normal Prostate Biopsies Predicts Cancer Presence

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The Wisconsin Alumni Research Foundation (WARF) is seeking commercial partner interested in developing a novel imaging-based method for the accurate diagnosis and prognosis of prostate cancer.

Overview

Prostate cancer is the most commonly diagnosed disease in men. Current clinical practice for prostate cancer screening uses the prostate specific antigen (PSA) test. However, PSA-based screening detects non-significant cancers, leading to an estimated 50% of over-diagnosis. Prostate biopsy is used to confirm disease. However, because of sampling errors, repeated sets of samples are commonly required to make a diagnosis. Typical biopsy schemes include 10 or more tissue cores removed under local anesthetic. Re-biopsy is often required two to three times in order to rule out cancer because of sampling errors. Cancers can also be missed because of sampling problems. There is a clear need for methods that allow easier and more accurate diagnosis and prognosis of prostate cancer.

The Invention

UW-Madison researchers have developed a method of detecting the presence of prostate cancer in a human subject comprising the steps of (a) obtaining a histologically normal prostate tissue sample from the patient and (b) quantifying the epithelial thickness or gland lumen roundness of the tissue, wherein an increase in epithelial thickness or a decrease in gland lumen roundness indicates the presence of prostate cancer or a prostate cancer field defect.

The researchers discovered a field defect in prostate tissue, which amounts to changes that occur in cancerous prostates in regions away from the tumor sites. They observed that epithelial thickness and lumen roundness (in the prostate gland ducts that run throughout the prostate) were statistically significantly different in histologically normal prostate biopsy tissues between men with and without clinically significant cancer elsewhere in the prostate.

Applications

- This simple imaging-based method can be used to assess the presence of cancer, or to rule out cancer, or may be used in combination with biomarkers to possibly improve the predictions.

Key Benefits

- This Image analysis method is simple, rapid and quantitative.
- Uses standard hematoxylin and eosin (H&E) stained pathology slides, which are widely used by every hospital pathology laboratory

Stage of Development

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The researchers have tested this method on histologically normal prostate biopsy tissue from several patients.

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Additional Information

For More Information About the Inventors

- [David Jarrard](#)

Tech Fields

- [Diagnostics & Biomarkers : Biomarkers](#)

For current licensing status, please contact Jennifer Gottwald at jennifer@warf.org or 608-960-9854

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