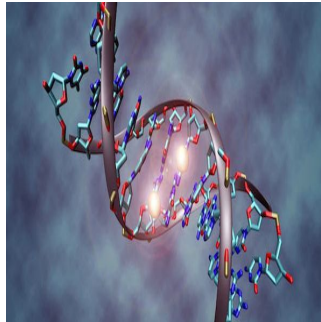

Biomarker Predicts Aggressive Prostate Cancer



A new study has identified a biomarker living beside the KLK3 gene that can predict which GS7 prostate cancer patients will have a more aggressive form of cancer, according to a *Science Newsline* report. The KLK3 gene is located on chromosome 19 and is responsible for encoding the prostate-specific antigen (PSA).

Results of the study published in *Clinical Cancer Research* show that the KLK3 gene is not only associated with prostate cancer aggression, but a single nucleotide polymorphism (SNP) on it is more apparent in GS7 cancer patients.

Biomarkers Can Help Stratify GS7 Cancer Patients

"This is the first report that I am aware of that indicates a genetic variant can stratify GS7 prostate cancer patients," said Jian Gu, PhD, associate professor at The University of Texas MD Anderson Cancer Center in Houston, Texas, and a key investigator on the study. "This is important because this group with heterogeneous prognosis is difficult to predict and there are no reliable biomarkers to stratify this group."

Experts and researchers have linked the Gleason score, an important predictor of prostate cancer outcomes, to several clinical end points, including clinical stage, cancer aggression and survival. There have been numerous studies associated with prostate cancer outcomes as well as GS7 prostate cancers, an intermediate grade of cancer accounting for about 30 to 40 percent of all prostate cancers, *Science Newsline* said.

In the new study, Gu and colleagues examined inherited genetic variants to determine if there would be any promising biomarkers for prostate cancer patients. The research team studied the genetic makeup of 72 SNPs identified from the genome-wide association studies (GWAS) in 1,827 prostate cancer patients. The team analysed associations of these SNPs with cancer aggression comparing them in clinically defined high and low aggressive cases. They found an SNP on the KLK3 gene that can predict an aggressive form of GS7 disease.

Development of Personalised Treatments Based on Biomarkers

"Treatment options for the GS7 disease are controversial because the burden of combined treatment modalities may outweigh the potential benefit in some patients," said Xifeng Wu, MD, PhD, Professor and Chair of Epidemiology at MD Anderson, and the lead investigator of the study. "It is critical that we develop personalised treatments based on additional biomarkers to stratify GS7 prostate cancers. Additional biomarkers may help us achieve personalized clinical management of low and intermediate risk prostate cancer patients."

The research team, according to Dr. Wu, is expanding the study and taking a pathway-based approach to systemically investigate genetic variants in microRNA regulatory pathways as biomarkers for the prognosis of prostate cancer patients. "We are also working on circulating biomarkers. Eventually, we will incorporate all biomarkers, epidemiological and clinical variants into nomograms to best predict the prognosis of prostate cancer patients at diagnosis," Dr. Wu added.

Source: ScienceNewsline.com
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