

Gene variants linked to lethal prostate cancer

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WASHINGTON, August 16, 2011 (AFP) - International researchers have found five gene variants strongly linked to aggressive prostate cancer, a discovery that could lead to new tests and treatments, a study said Tuesday.

Prostate cancer is the second deadliest among men after lung cancer, but doctors have long puzzled over why some tumors turn deadly while others can be monitored for years without much growth.

This uncertainty has led to questions about the value of screening, when some men are "overtreated" for tumors that were not life-threatening and may face side effects such as loss of sexual function and bladder control problems.

The findings by the US-Swedish team could transform how prostate cancer is treated by helping doctors identify a subgroup of people whose tumors are more likely to kill them and targeting their tumors accordingly.

Early therapy for prostate cancer can cost up to \$3 billion per year in the United States, said the study in the September issue of Cancer Epidemiology, Biomarkers & Prevention.

"While previous studies have suggested that genetic background influences prostate cancer outcomes, this is the first study to validate genetic markers associated with lethal disease," said lead author Janet Stanford of the Fred Hutchinson Cancer Research Center in Seattle.

The five markers -- LEPR, RNASEL, IL4, CRY1 and ARVCF -- are single-nucleotide polymorphisms, or SNPs, DNA variations that may be linked to disease.

"We chose to study SNPs in genes that potentially play a key role in biological pathways that may contribute to prostate cancer progression such as inflammation, steroid-hormone production and metabolism, DNA repair, circadian rhythm and vitamin D activity," Stanford said.

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Researchers analyzed DNA in blood samples from 1,309 Seattle-area prostate cancer patients aged 35 to 74 at the time of diagnosis.

They found 22 SNPs that were "significantly associated with prostate cancer-specific mortality," according to the study.

Further examination of the 22 SNPs in a Swedish group of cancer patients with the same age parameters narrowed down the five SNPs that were most closely linked to death from prostate cancer.

"Patients who carried four or all five of these genetic markers had a 50 percent higher risk of dying from their prostate cancer than patients who had two or fewer," said the study.

"The risk of dying from prostate cancer increased with the number of SNP genetic variants a patient carried."

Prostate cancer kills about 32,000 men in the United States each year, but is the most commonly diagnosed of all male cancers with 240,890 new cases each year, said the National Cancer Institute.

More studies are planned to examine other patient populations.

African-Americans are twice as likely to die from prostate cancer as whites, according to the NCI, which noted that the disease is common in North America and northwestern Europe, but less so in Asia and South America.

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