

Prostate Cancer: Risk Increases With The Number of Affected Family Members

The risk of getting prostate cancer increases with the number of directly related family members who are affected by the disease. Scientists of the German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) in Heidelberg have now calculated the age-specific individual risks in the largest study ever made on familial prostate cancer.

For a long time now doctors have known that prostate cancer “runs in the family”. Men with family members who have been diagnosed with the disease have an elevated risk of developing cancer of the prostate. But exactly how high is an individual person’s risk? For whom and at what age should an early detection screening urgently be recommended?

Researchers of the department headed by Kari Hemminki at DKFZ have analyzed these questions in the largest study ever published on familial prostate cancer. The study included 26,651 prostate cancer patients, 5,623 of whom came from families in which the disease had been diagnosed before.

The more of a man’s direct relatives, i.e. brothers and fathers, are affected, the higher is his personal risk to develop prostate cancer himself. Thus, the researchers calculated that men up to an age of 65 years with three affected brothers have a risk that is 23 times higher than that of the control group (men without affected family members). Men aged between 65 and 74 years, whose father was or is the only one affected, have a risk that is increased by 1.8 times and, thus, the lowest risk elevation in the familial cancer group. The DKFZ researchers recognized a general tendency that the personal risk is the higher, the younger affected relatives were at the time of diagnosis.

Elevated familial cancer risks are often doubted. Critics argue that results tend to be distorted because relatives of affected persons are alarmed and have early detection exams more often than the rest of the population. For this reason, the argument runs, they are more frequently overdiagnosed, because even tumors are found that might never have caused any symptoms during their lifetime. In order to refute this criticism, the DKFZ researchers also investigated the prostate cancer mortality in relation to the number of affected family members. They arrived at the same risk distribution as for newly diagnosed cases: The more direct relatives are affected, the higher is a person’s risk of dying from prostate cancer. Thus, the scientists have proved that the risk increase is real and not just due to more frequent early detection examinations.

“Our results provide a good guidance for doctors. If a man has several affected relatives who may even have been diagnosed at a young age, then his personal risk is substantially increased. In this case, a family doctor should urgently recommend having an early detection examination,” said study head Kari Hemminki.

The study is based on data of the Swedish National Family Cancer Database which contains data on 11.8 million individuals and every single one of over one million cancer cases that occurred between the years of 1958 and 2006. Since the cancer database is linked with a multiple-generation register, it is possible to track cancer cases among parents and siblings of patients.

Andreas Brandt, Justo Lorenzo Bermejo, Jan Sundquist and Kari Hemminki: Age-Specific Risk of Incident Prostate Cancer and Risk of Death from Prostate Cancer Defined by the Number of Affected Family Members. *European Urology* 2010, DOI: 10.1016/j.eururo.2010.02.002

The German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) is the largest biomedical research institute in Germany and is a member of the Helmholtz Association of National Research Centers. More than 2,000 staff members, including 850 scientists, are investigating the mechanisms of cancer and are working to identify cancer risk factors. They provide the foundations for developing novel approaches in the prevention, diagnosis, and treatment of cancer. In addition, the staff of the Cancer Information Service (KID) offers information about the widespread disease of cancer for patients, their families, and the general public. The Center is funded by the German Federal Ministry of Education and Research (90%) and the State of Baden-Württemberg (10%).

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