

Increasing Incidence of Prostate Cancer: A Matter of Early Detection?

Over the past five decades, the number of men diagnosed with prostate cancer in Western industrialized nations has been rising – and the cancer is diagnosed at ever younger ages of the patients. This increase is at least partly due to early detection screenings that have been introduced, as is shown by a study of the Deutsches Krebsforschungszentrum (German Cancer Research Center, DKFZ).

Based on data contained in the Swedish Family Cancer Register, epidemiologists Professor Dr. Kari Hemminki, Rajesh Rawal and Dr. Justo Lorenzo Bermejo have calculated that the number of prostate cancer cases in Sweden has almost tripled between 1960 and 2002. The increase occurred in two distinct phases: Up until 1995, primarily the incidence among elderly men after age 70 was on the rise. The steep upward flux of the incidence curve observed after 1995 concerns mainly younger men in their sixties. During the first phase until 1995, early detection of prostate cancer was usually based on tissue biopsies. The second phase of the rise started parallel to the introduction of tests for prostate-specific antigen (PSA tests). This suggests that younger men, too, have undergone this simple blood test even before symptoms of cancer start occurring. The fact that carcinomas in very early stages are thereby detected could at least partly account for the rise. Thus, similar increases were observed in the incidences of breast cancer following the introduction of mammography screenings and of cervical cancer after PAP smears for early diagnosis had been introduced.

Participation in early detection screenings also has effects on familial cancer risk. Hemminki and Lorenzo Bermejo have analyzed data of brother pairs who were both affected by prostate cancer. If one of the brothers is diagnosed with the disease, then there are increased chances that the other one, concerned about his own health, will undergo an early detection examination. This may reveal carcinomas which have not yet produced any symptoms and which, under different familial circumstances, may not have been detected until many years later or possibly never at all.

Due to this effect, the scientists advise to also apply caution when analyzing data on genetic cancer risk: Human behavior is influenced by many factors that may have an effect on cancer statistics and may at first sight be misinterpreted as genetic influences.

* Kari Hemminki, Rajesh Rawal and Justo Lorenzo Bermejo: Prostate Cancer Screening, Changing Age-specific Incidence Trends and Implications on Familial Risk. *International Journal of Cancer* 113, 312; 2005

The task of the Deutsches Krebsforschungszentrum in Heidelberg (German Cancer Research Center, DKFZ) is to systematically investigate the mechanisms of cancer development and to identify cancer risk factors. The results of this basic research are expected to lead to new approaches in the prevention, diagnosis and treatment of cancer. The Center is financed to 90 percent by the Federal Ministry of Education and Research and to 10 percent by the State of Baden-Wuerttemberg. It is a member of the Helmholtz Association of National Research Centers (Helmholtz-Gemeinschaft Deutscher Forschungszentren e.V.).

This press release is available at www.dkfz.de/pressemitteilungen

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