

The potential of family registries for research, detection and prevention

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The Basel Familial Cancer Registry was established in 1982. Detailed pedigree data are obtained from 200 cancer patients every year [1]. Analysis of familial clustering is performed 1. by comparing the tumor spectrum of different family groups defined by the proband's cancer sites, and 2. by comparing tumor incidence and spectrum in the families with tumor incidence and spectrum in the population (data from the population-based Basel Cancer Registry).

29% of 380 adult patients had 1 first-degree relative with cancer, 11% had 2 and 6% had 3 or more. In 6% of these families there was one or more first-degree relative with cancer of the same site as in the proband.

Significant familial cancer aggregations were found with brain-solid pediatric cancer, breast-breast, breast with all anatomic sites, colorectum-colorectum, leukemia-leukemia, lung-lung, lung-testis, lymphoma-lymphoma, ovary-ovary, ovary-testis, sarcoma-leukemia, stomach-stomach, stomach-colorectal (all at $p < 0.05$). Stomach cancer also occurs more frequently in relatives of patients with malignant lymphoproliferative disorders than in relatives of patients with breast cancer or other malignancies [2]. First-degree relatives of patients with colorectal carcinoma without polyposis coli have a 3.6 times greater risk of developing colorectal carcinoma themselves [3].

Laboratory investigations are initiated in families with conspicuous cancer aggregations. Genomic and chromosomal instability as well as reduced DNA repair capacity after UV-C exposure were observed in subgroups of cancer patients and their relatives.

Patients and relatives are counselled. Programs of early detection in high risk persons are being set up, starting with colorectal carcinoma.

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Summary

The potential of family registries for research, detection and prevention. Familial Cancer Registries have an enormous potential for identifying persons at high cancer risk, for etiological and biomarker studies as well as for the evaluation of detection and prevention programs in high risk groups.

References.

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