

Family history and survival from bowel cancer

NCIN Data Briefing

Background

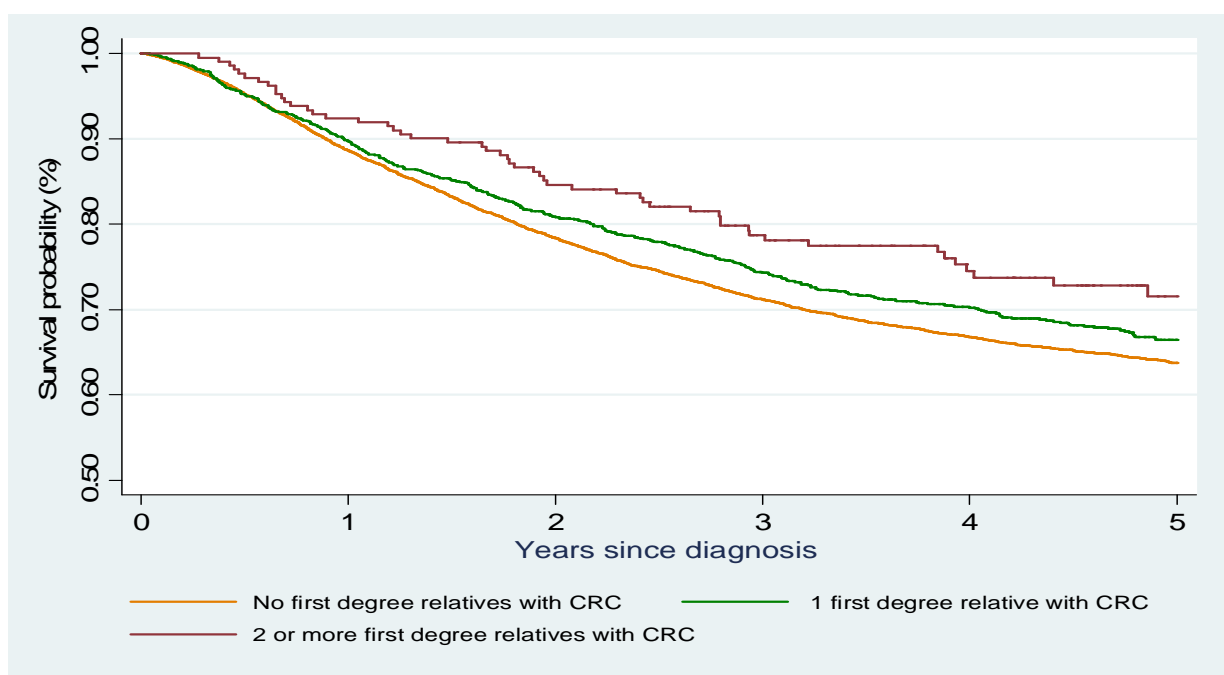
Although having a family history of bowel cancer is a well-established risk factor for developing the illness much less is known about its impact on prognosis. By linking information provided by the National study of Colorectal Cancer Genetics (NSCCG) into the routine NHS data held in the the National Cancer Data Repository (NCDR) this study aimed to investigate the relationship between family history and the characteristics and outcomes of bowel cancer.

Findings

More than 10,000 participants in the National Study of Colorectal Cancer Genetics could be identified in the NCDR and their outcomes and survival experience form the basis of this work.

Of these individuals, 1,697 reported a family history (defined as any first-degree relative such as a parent, sibling or child) of bowel cancer. The majority only had one family member affected but a small number of people (211) reported two or more of their family having the disease.

Figure 1: Five- year survival in relation to the number of first-degree relatives with colorectal cancer.



KEY MESSAGES:

Individuals who develop bowel cancer and also have a family history of the disease are more likely to have tumours on the right side of the colon and experience better survival than those who do not have a family history.

The more family members that are affected by the disease the stronger the relationship with improve survival becomes.

When the characteristics of those with and without a family history of the illness were compared there were no differences in terms of age at diagnosis, sex, stage of disease, presence of multiple cancers, co-morbidity, mode of presentation to hospital and surgical management. A higher proportion of individuals with a family history of the disease did, however, have tumours in the right side of the bowel than on the left side or in the rectum.

Survival from the disease was also significantly better in those who had a family history of the illness and the effect grew in relation to the total number of family members affected (Figure 1)

Interpretation

The basis of the survival advantage associated with a family history of the bowel cancer is unclear. It is possible that having close relatives diagnosed with the illness may heighten a person's awareness and so, if symptoms develop, lead them to earlier diagnosis and, consequently, a better prognosis. But this study showed there was no difference in stage at diagnosis or the proportion of cases presenting as an emergency which would suggest earlier diagnosis in those with a family history does not explain the survival differences observed.

The study did identify, however, a difference in the proportion of right-sided tumours in those with a family history of the disease. It is well recognized that such tumours tend to arise because of deficient DNA mismatch repair mechanisms (MMR) within cells. Tumours that arise from such MMR mechanisms are also linked to improved prognosis. The survival advantage seen for individuals with a family history may, therefore be the result of an over representation of this form of tumour in this population.

Acknowledgement

This data briefing is based on the publication: A retrospective observational study of the relationship between family history and survival from colorectal cancer. Morris EJA, Peneger S, Whitehouse LE, Quirke P, Finan P, Bishop DT, Wilkinson J & Houlston RS. British Journal of Cancer (2013);108(7):1502-7. Doi:10.1038/bjc.2013.91

The National Cancer Intelligence Network is a UK-wide initiative, working to drive improvements in standards of cancer care and clinical outcomes by improving and using the information collected about cancer patients for analysis, publication and research. Sitting within the National Cancer Research Institute (NCRI), the NCIN works closely with cancer services in England, Scotland, Wales and Northern Ireland. In England, the NCIN is part of the National Cancer Programme.