

Crohn's disease in Northern Ireland — a retrospective study of 440 cases

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SUMMARY

The incidence of Crohn's disease in the community is thought to be changing, with conflicting evidence for increases, decreases or steady state situations being described. A retrospective study, using strict criteria for diagnosis, for a 16 year period in Northern Ireland demonstrated an increasing incidence of Crohn's disease, with a distribution in the population similar to that described in previous studies.

INTRODUCTION

Crohn's disease has been the subject of many recent investigations with regard to its incidence and distribution, in the hope that epidemiological data will give a better indication of its aetiology and nature. The condition is attracting more clinical attention, both because of the increased awareness of its presence and because it can result in severe symptoms which may lead to grave complications, often in the younger members of the community.

There are conflicting views in the literature about the incidence of this disease with reported increases,^{3, 19, 20, 25} decreases¹⁴ and "plateau" situations⁹ being described. We previously reported an epidemiological study of Crohn's disease in Northern Ireland for the years 1966–1973,¹⁰ and in a short report highlighted the change in incidence of the disease in the years 1966–81.¹¹ The purpose of the present communication is to record the distribution of the disease for a further eight years, and to define the pattern of disease for the total 16 year period 1966–1981. Data were collected by the same method on each occasion, and information from the two periods is directly comparable.

With a numerically stable population in a circumscribed geographical region, Northern Ireland is an ideal area in which to conduct epidemiological studies. Since the mid-sixties more accurate hospital records have become available

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at most of the hospitals, allowing for improved data collection. Throughout the 16 year period under review the histopathology service was centralised in Belfast and Londonderry. Patients have ready access to medical care and hospital investigations within the Province and it has been shown that the vast majority of patients with Crohn's disease eventually present at hospital for investigation and treatment.^{1, 3, 5}

METHODS

This investigation was conducted retrospectively by analysis of hospital records. Patients were accepted for inclusion if two or more of the following criteria for the diagnosis of Crohn's disease were present: (a) clinical history of crampy abdominal pain, diarrhoea and weight loss; (b) typical macroscopic findings in the gastrointestinal tract at laparotomy or endoscopy; (c) a definite histological diagnosis on a resected specimen or biopsy material; or (d) characteristic radiological findings present on contrast studies of the small or large bowel.

For the years 1966–1981 the patients were traced by reference to the histopathology and hospital central medical records. The case notes of patients who had a provisional diagnosis of Crohn's disease were examined by one of the authors, after consent had been obtained from the clinician in charge, and data was recorded for computer evaluation. The date of first presentation was taken as the most accurate reference point, since the precise diagnosis was often delayed and in many cases patients were vague about the duration of their symptoms. Patients not resident in Northern Ireland, or diagnosed or treated outside the Province were excluded. A small number of cases was not included, if there was a conflict in diagnosis with ulcerative colitis, or when previously diagnosed Crohn's disease recurred in the study period.

RESULTS

A total of 817 cases with a provisional diagnosis of Crohn's disease was traced. The hospital records of 47 could not be found. There were 440 cases which fulfilled the criteria for diagnosis and inclusion in the study, and these case notes were examined in detail. There were 183 (42%) males and 257 (58%) females (male : female ratio 1:1.4 compared with the male : female ratio in the general population of 1:1.04).²³

The crude incidence for the 16 year period was 1.83 new cases/100,000/year. (Males 1.57/100,000/year; females 2.12/year). In the first eight year period there were 1.13 affected males/100,000/year and 1.46 affected females/year, a mean incidence of 1.30/100,000/year. In the second eight year period the crude incidence had increased to 1.81/100,000/year for males and 2.85/100,000/year for females, a mean incidence of 2.34/100,000/year. Thus there was an increase by a factor of 1.7 for males and of 1.9 for females, or an overall increase over the original eight year period by a factor of 1.8. Throughout the study period the trend was for an increase in the number of new cases diagnosed annually (Fig 1).

Analysis of the age at first presentation revealed a higher incidence of Crohn's disease in the third decade in both sexes, with female preponderance in almost every decade (Fig 2).

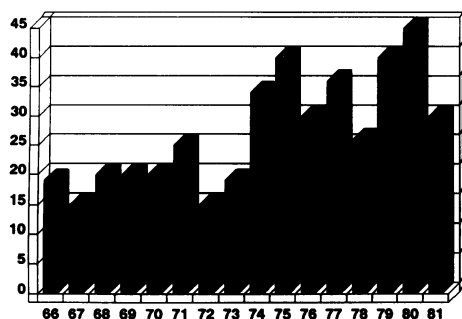


Fig 1. Crohn's disease in Northern Ireland. New cases presenting per year, 1966 to 1981.

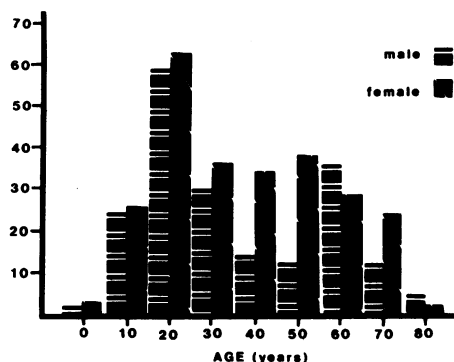


Fig 2. Crohn's disease in Northern Ireland. Age at first presentation in males and females.

Geographical distribution by county is shown in the Table. The observed number of cases of Crohn's disease exceeded the expected number in the Belfast City area and in County Armagh; the expected number of cases being estimated from the incidence rate for the whole Northern Ireland population. When the anatomical distribution of the inflammatory lesion was considered, the small bowel was involved in 143 cases (33%), the large bowel and anus in 178 cases (40%) and there was a combined small and large bowel lesion in 119 cases (27%). Two cases were considered to have duodenal involvement by Crohn's disease and in 9 cases anal disease was the sole site of involvement (2%).

TABLE

Crohn's disease: distribution of 440 cases diagnosed in Northern Ireland 1966-81. (The total population was 1,536,065 in 1971, and 1,507,065 at the 1981 census)

	Population	Expected cases	Observed cases	Incidence per 100,000
City of Belfast	3.6×10^5	100	178	2.98
City of Londonderry	0.75×10^5	19	19	1.24
County Antrim	3.56×10^5	96	88	1.48
County Armagh	1.34×10^5	23	26	1.09
County Down	3.12×10^5	91	84	1.84
County Fermanagh	0.50×10^5	14	12	1.60
County Londonderry	1.13×10^5	30	10	0.71
County Tyrone	1.39×10^5	39	23	1.06

DISCUSSION

Retrospective clinical studies are frequently criticised because of inaccuracy in documentation, inadequacy of clinical detail and incomplete tracing of clinical records. In recent years with the use of more standardised medical record systems

and hospital activity analysis, in conjunction with the International Classification of Disease, it is possible to acquire a more complete retrieval of patient information. The personal details about each patient were readily available from admission and identification documentation in the hospital and ward records. It has been assumed that almost all patients with this chronic disease will eventually require hospital care, and only hospital records have been used as the source of information; no community information was sought.

Crohn's disease may well be a new disease of the twentieth century,¹² and it has become apparent following the earlier epidemiological research of Evans and Acheson⁶ that the incidence of the disease has been changing. In some areas increases in incidence have been of almost epidemic proportions²⁰ whereas other reports have suggested a decrease¹⁴ or a plateau type of situation.⁹ Problems of definition, and differences in methods of acquiring and recording data have made direct comparisons of the change in incidence difficult, yet there is a need to continue to monitor these changes as this condition tends to affect the younger members of the community and places a heavy and chronic burden on available medical resources. By employing similar strict criteria it should be possible, in the future to audit the incidence in the same location and to compare with similar populations elsewhere.

The clinicians and pathologists in post over the two study periods have been largely unchanged, and we feel that it is unlikely that the condition has simply become more widely diagnosed in later years because of a greater awareness of the colonic manifestations of Crohn's disease. This aspect of the syndrome had already become widely recognised through the writings of Lockhart-Mummery and Morson in the 1960s.¹⁶ Completeness of data collection remains a problem with retrospective studies and in particular with hospital-based data which relates largely to in-patients. However, other investigations of this type show that the vast majority of patients with Crohn's disease eventually require hospital investigation and treatment, including diagnostic radiology and biopsy.^{1, 5} It is apparent that the disease tends to be overdiagnosed clinically as seen in the rejection of 377 patients from 817 provisionally diagnosed cases when strict criteria were applied to clinical and diagnostic information. Incomplete patient identification, combined with strict diagnostic criteria may lead to an actual underestimate of the true incidence of the disease in the population. This study indicates that the incidence of new cases of Crohn's disease has almost doubled when the period 1974–1981 is compared with 1966–1973; a similar increase was observed for both males and females, confirming the trend in recent publications.^{2, 13, 17} The total number of new cases presenting annually has steadily increased throughout the years 1966–1981, in contrast to the findings of Kyle and Stark¹⁴ and without any evidence of a plateau being reached.⁹

The peak incidence of the disease has again been confirmed in the third decade for both males and females, as recorded originally by Crohn and his colleagues⁴ but a further peak in the seventh and eighth decades has also been demonstrated. This bimodal distribution has been discussed previously^{7, 8, 12, 19} and the preponderance of females has been a constant feature of many British reports.^{13, 15, 17, 21} When the geographical distribution of the cases was considered it was found that there was a predominance in urban dwellers, in agreement with earlier observations in Scotland¹³ and in Wales,¹⁸ though latterly such a definite trend was not apparent in northeast Scotland.¹⁴

The inflammatory lesion was in the small intestine in 33% of cases, in the large intestine in 40% and a combined small and large bowel lesion was observed in 27% of the patients. This is similar to the pattern found in the Blackpool area¹⁵ but with a lesser small bowel involvement than that reported in Clydesdale²⁴ and northeast Scotland.¹³

From this study it would appear that there is a definite increase in the incidence of Crohn's disease in Northern Ireland, which is consistent with the trend reported in other regions of the British Isles, and the distribution suggests an urban predilection. Our initial findings on the incidence of Crohn's disease in Northern Ireland¹⁰ have been confirmed and it is clear that this disease is not rare in the Irish and continues to have a similar distribution to other regions in these Islands.

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