Crohn's disease in Blackpool – incidence and prevalence 1968–80

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SUMMARY The occurrence of Crohn's disease has been studied in a population of approximately 300 000 in Blackpool, a seaside town in the north of England, and the surrounding area. Between 1968 and 1980, 156 patients resident in the area were diagnosed as having Crohn's disease – an annual incidence of 4 per 10^5 . For the years 1971–75, the incidence was 3.3 per 10^5 and for 1976–80 it was 6.1 per 10^5 . The trend is upwards but there was an apparent fall in incidence in 1974–75. In 1979 there was a peak incidence of 8 per 10^5 . Over the period of study, there was an increase in all three anatomical types, small intestinal, large intestinal, and mixed disease but this increase was most marked for purely large intestinal disease. Of the 156 cases, 35% had small intestinal disease at presentation, 35% had large intestinal disease and 30% had mixed disease. The overall sex ratio was female to male 1.89:1 but highest for large bowel disease – 2.6:1. Analysis of age at presentation at different sites shows a unimodal distribution for small intestinal and mixed disease with a peak in the third and fourth decades. Large bowel Crohn's disease shows a bimodal distribution with peaks in the third and eighth decades. During the period of study we identified 185 cases of Crohn's disease in the study population. On 31 December 1980, 141 patients with the condition were living, a prevalence of 47 per 10^5 .

A number of studies in recent years has suggested that Crohn's disease has increased in frequency in the United Kingdom.^{1–5} Similar trends have been shown in Scandinavia⁶ and in the USA.^{7,8} Experience in the Colitis Clinic at Blackpool Victoria Hospital suggested a confirmation of this trend and the present study was undertaken to analyse available information on patients with Crohn's disease occurring in the area served by the hospital between 1968–1980.

Methods

PATIENTS

Blackpool Victoria Hospital is the District General Hospital for a population of approximately 300 000. This figure has been fairly constant over the period 1968–80 and has been used in the calculations in this study. The main town is Blackpool with a population of 170 000 the balance being made up by a number of small towns – that is, Fleetwood, Thornton Cleveleys, Poulton, Lytham St Annes,

and Kirkham. The population is predominantly urban. Victoria Hospital is the main referring centre for the area, very few patients being referred elsewhere. We attempted to identify all patients with Crohn's disease occurring in Blackpool and the surrounding area from 1968–1980. The following sources were used: (1) A Colitis Clinic has been held since 1971 and the diagnostic index provided the majority of cases. (2) A diagnostic index has also been maintained in the Department of Histopathology during the relevant years and records were reviewed with the cooperation of the consultant histopathologists. (3) The physicians and surgeons at the hospital agreed to provide information from their case records. (4) The Hospital Activity Analysis data maintained by the North-West Regional Health Authority were studied. This provides details of all patients admitted to hospital in the region and in this way we hope to have identified most patients referred to hospitals outside the district.

The diagnosis of Crohn's disease was based on the standard criteria as follows: (1) Typical clinical features including abdominal pain, weight loss and diarrhoea. (2) Macroscopic features at laparotomy.

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Received for publication 18 May 1984

(3) Histological features of material obtained at operation or endoscopy. (4) Typical radiological appearances.

Two or more of these criteria were required for confirmation of the diagnosis. All available material was assessed and the diagnosis of Crohn's disease confirmed or discarded. Patients with transient acute ileitis have been excluded. It has been suggested that some of the apparent increase in the occurrence of Crohn's disease can be attributed to increased recognition and accordingly reclassification of cases of Crohn's colitis. We feel that the widespread recognition of Crohn's colitis predated the period of this study.^{9 10} To reduce possible bias, we have analysed all cases according to date and age at presentation. In general this coincides with the time of diagnosis, but in occasional patients diagnosis of the exact type of colitis may be delayed until the illness has progressed. Where any doubt remained in patients with colitis as to whether non-specific ulcerative colitis or Crohn's disease was the diagnosis the case was excluded. This series, therefore, probably provides a slight underestimate for the area in view of the likelihood of the failure to identify some cases and the exclusion of a few others.

Some previous studies have analysed cases according to time at onset of symptoms but this does not take account of the delay in diagnosis which frequently occurs in Crohn's disease.¹¹ Analysis has been carried out according to age and site of involvement at presentation. Cases have been classified into those presenting with small intestinal, large intestinal or mixed disease. In the majority of the last group disease was continuous in the ileocaecal region.

Results

Between the years 1968 and 1980 156 patients living in Blackpool and district were diagnosed as having Crohn's disease, an annual incidence of 4 per 10^5 . The incidence varied from 0.3 per 10^5 in 1968 to a peak of 8 per 10^5 in 1979. The incidence for the years 1971–75 was 3.3 per 10^5 and for 1976–80 it was 6.1 per 10^5 . The increase over the years of study involves both men and women (Fig. 1) and all three anatomical types (Fig. 2) and not, as has been suggested, an increased awareness and/or occurrence of Crohn's colitis. The trend is upwards but there was an apparent fall in incidence in 1974–5. In view of the possibility that this fall might be an artefact, the data were replotted utilising biennial figures, comparing those in which the two years of low incidence are first paired together and then separated (Fig. 3). The apparent reduction

Fig. 1 New cases of Crohn's disease in Blackpool 1968–80.

disappears and other variations, apparent when the figures are assessed annually, become less apparent when biennial figures are viewed in this way. The disease has a peak incidence of diagnosis during the third decade. When the different anatomical types are considered there is a predominantly unimodal age distribution for small bowel and combined small

Fig. 2 New cases of Crohn's disease in Blackpool 1968–80. Total and anatomical types.

Fig. 3 Crohn's disease in Blackpool 1968-80. Biennial occurrence.

and large bowel Crohn's disease with a peak in the third and fourth decades. Large bowel Crohn's disease, however, shows a bimodal age distribution with peak incidences in the third and eighth decade, the latter peak being partly attributable to a high incidence of colonic Crohn's in women between 70 and 80 years of age (Fig. 4). The great majority of cases presenting over the age of 70 years have solely large intestinal disease, the only exception being a 92 year old woman with extensive ileocaecal disease. The ages at presentation for men and women are similar and the increased incidence in women remains through the age groups (Fig. 4). In addition the age distribution shows no significant difference when comparison is made between the early and later years of the study (Fig. 5).

In this series the frequency of the three anatomical types was approximately equal. The overall sex ratio was female to male 1.89:1 but was highest for large bowel disease 2.6:1 (Table 1). The mean age at presentation was similar for small bowel and mixed disease but significantly higher for large bowel disease (Table 2).

Fig. 4 Occurrence of Crohn's disease in Blackpool 1968-80 according to age and sex at presentation.

Fig. 5 Age distribution of patients with Crohn's disease for the early (1968–75) and late (1976–80) periods of the study.

During the period of study, we identified 185 cases of Crohn's disease in the Blackpool district. One hundred and forty one patients were living on 31 December 1980, a prevalence for that date of 47 per 10⁵, 53 per 10⁵ for women and 36 per 10⁵ for men. The age and sex related prevalence rates are shown in Fig. 6. Overall predominance in women is apparent. In the eighth decade, prevalence is almost equal although in actual numbers, there were almost twice as many women (9 vs 5) indicating the excess female population at higher ages in this community.

Discussion

This study conforms with previous observations that Crohn's disease has increased in the United Kingdom in the last 30 years or so^{1,2,4} although reports from two areas in Wales show an apparent flattening of the trend in the 1970s.^{3,5} A report from Aberdeen proposed a possible fall in incidence in

Table 1 Crohn's disease in Blackpool (1968–80) distribution of cases by sex and anatomical site

	Numbers	Women	Men	Ratio
Small bowel	55 (35%)	33	22	1.50:1
Mixed	47 (30%)	30	17	1.76:1
Large bowel	54 (35%)	39	15	2.60:1
All cases	156 (100%)	102	54	1.89:1

Table 2 Crohn's disease in Blackpool (1968–80) average age of onset

	Both sexes (yr)	Women (yr)	Men (yr)
Small bowel	37	36	38
Mixed	37	42	29
Large bowel	52	50	53

the mid 1970s.¹² A comparable apparent fall was abolished in our own study by plotting the figures biennially (Fig. 3). In assessing whether Crohn's disease is still becoming more common, Harris *et al*¹³ attached no importance to annual variation in view of possible delays in presentation and diagnosis. The incidence in the present study is among the highest reported comparable to figures reported from Malmö in Sweden¹⁴ and two areas of the USA.^{7,8} The two latter studies show a continuing increase comparable with our own findings.

The aetiology of Crohn's disease is not known but regional variations and changing incidence indicate that environmental factors are important. Several reports indicate a high incidence within families^{15–17} although the relevant predisposing genetic factors are not recognised. A slight preponderance in urban as opposed to rural population has been reported.¹⁸ Most series show an approximately equal sex incidence. A few show female predominance although none as high as in our own series – that is,

Fig. 6 Prevalence of Crohn's disease in Blackpool on 31 December, 1980, according to age and sex.

1:89:1 – the difference being even more marked in large bowel disease.

The cause of the high incidence and prevalence of Crohn's disease in the area under study is not known. The available evidence suggests that the rising trend observed since the late 1960s is continuing.

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