Incidence of ulcerative colitis in Cardiff over 20 years: 1968-87

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Abstract

The annual incidence of ulcerative colitis in the city of Cardiff was examined over a 20 year period. In the decade 1968-77, the mean annual incidence was 6.4 per 10⁵ of the population compared with 6.3 for the period 1978-87. There was no difference in the distribution or extent of the disease between decades or between sexes. This contrasts with the increased incidence of Crohn's disease during the same period. The study included a survey of family practitioners which identified a further 19 patients (11% of the total).

The incidences of both ulcerative colitis and Crohn's disease are now similar in most western countries.¹ We have examined the incidence of ulcerative colitis in the city of Cardiff between 1968 and 1987 and made comparisons with Crohn's disease over the same period.

Methods

PATIENTS

The incidence of ulcerative colitis between 1968 and 1977 in the Cardiff region has previously been reported.² These data were re-examined for those patients who were resident within the city limits using criteria defined at a workshop sponsored by the European Commission on the Epidemiology and Pathogenesis of Inflammatory Bowel Disease.³ In addition, more recent figures for the subsequent decade 1978-87 were also determined.

The date at which the diagnosis of ulcerative colitis was first made was used to identify patients for the study and the interval from the onset of symptoms to diagnosis was noted. The extent of disease was determined by double contrast barium enema or colonoscopy, or both, and was defined as distal (confined to the rectum and sigmoid), left sided (with involvement

proximal to the sigmoid), and total (extending proximally to the mid-transverse colon).

Cases were identified by first checking the hospital activity analysis of inpatients, then diagnostic indices from the departments of pathology and radiology, and finally letter indices of two gastroenterologists in Cardiff. In addition, a questionnaire was sent to all 227 general practitioners in South Glamorgan asking them to identify patients with ulcerative colitis in their practice. Altogether 80% of practitioners replied to the questionnaire, and the remaining 20%, who were subsequently contacted by telephone, were unable to identify patients from their register. During this search the case notes from 699 patients were reviewed and 176 with ulcerative colitis were identified who fulfilled the accepted criteria (Table I).

The Registrar General's mid-year estimates for the population of Cardiff with its age and sex structure were used to calculate incidence and age specific incidence. Age standardisation of the difference between the two decades was effected by Cochran's method.⁴ Statistical analysis was performed by χ^2 test, using Yates's correction.

Results

We identified 357 residents of the City of Cardiff in whom the diagnosis of ulcerative colitis was first made between 1 January 1968 and 31 December 1987. There were 180 men and 177 women. The median age at diagnosis in men was 33 years (range 12-78 years) and in women 36 years (range 12-87 years). The numbers identified from different sources together with the percentage they constituted of the total are shown in Table I. Seventy seven (44%) were identified from the hospital activity analysis of inpatients (which involved a review of 249 case notes), a further 35 (20%) patients from pathology records, nine (5%) from the radiology index, 36 (20%) from the gastroenterology letter indices, and finally 19 additional patients (11%)

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TABLE I Cases of ulcerative colitis (UC) identified from each source between 1978 and 1987

Source of data	HAA	Histology	Radiology	GI letter index	Paediatric letter index	GPs	Total no of case notes reviewed
UC diagnosed in Cardiff residents 1978-87	77	35	9	36	0	19	176
UC diagnosed before 1978 or after 1987	65	18	9	88	3	56	239
UC non-resident in Cardiff city	72	51	24	0	0	0	147
UC diagnosed outside Cardiff*	9	3	0	4	0	88	24
Crohn's disease	8	5	2	3	17	37	72
Irritable bowel	8	0	0	0	0	5	13
Other diagnoses	10	0	3	0	0	15	28
Total no of cases reviewed from each source	249	180	47	200	20	214	699

HAA=hospital activity analysis.
*Ulcerative colitis diagnosed outside Cardiff but patient moved to Cardiff after the diagnosis was made.

Figure 1: Annual incidence of ulcerative colitis between 1968 and 1987, with mean five year aggregates.

were traced by the family practitioner questionnaire.

The mean annual incidence for the whole period was 6.3 per 10⁵ inhabitants, and the figures for men and women were 6.1 and 6.6 respectively. The annual incidence over the 20 years, together with five year aggregates, are given in Figure 1. Despite considerable variation between annual values, the overall incidence for five year periods showed little change. Standardised for age, the incidence during the two decades 1968–77 and 1978–87 gave marginally lower values in the second decade (0.37 per 10⁵ per year lower, 95% confidence interval –1.69, +0.95), a non-significant reduction. Figures for the first decade are lower than reported by us previously,² because the survey was limited to the city and diagnostic criteria were changed slightly.³

The incidence of colitis in different age groups was expressed as the age specific incidence (Figure 2). Colitis continues to be rare in childhood, although the incidence increased throughout the second and third decades of life and remained high thereafter with some suggestion of a bimodal age distribution during the period 1978–87. The mean interval from onset of symptoms to diagnosis was 7 months; this was reduced

Figure 2: Age specific incidence of ulcerative colitis during the decades 1968–77 and 1978–87.

from 8.9 months (range 0 to 19 years) during the period 1968–77 to 5.1 months (range 0–3 years) in the second decade 1978–87. At the time of diagnosis 194 patients had distal disease only (54.4%), 80 had left sided disease (22.4%), and 83 total colitis (23.2%) (Fig 3). The extent of disease showed a similar distribution in all age groups. There was no significant difference in the distribution of the extent of disease between the two decades ($\chi^2=1.57$, NS) or between the sexes ($\chi^2=3.95$, NS). Incident cases were predominantly female in the first decade (99/181; 55%) and male in the second (98/176; 56%). The difference in sex distribution between the decades was of borderline significance ($\chi^2=3.84$, $p<0.05$).

Discussion

The incidence of colitis in Cardiff city between 1968 and 1987 remained steady at about 6.3 per 10⁵. Figures from the second decade 1978–87 show that the disease continues to be rare in childhood but remains uniformly high throughout most of adult life. Data for both decades were collected in a similar manner. The Cardiff hospitals have an excellent diagnostic index of inpatients, which has been computerised since 1968. A clinic for inflammatory bowel disease was established in 1965, initially at the Cardiff Royal Infirmary and more recently at the University Hospital of Wales. Patients are referred to this clinic both by family practitioners and hospital consultants. Since the diagnostic indices from both the radiology and pathology departments were not computerised, all the family practitioners in South Glamorgan were also contacted to identify additional patients; this last procedure was not undertaken during the initial study of 1968–77.² A further 19 cases were identified as a consequence of this additional measure. If this were extrapolated to the first decade and a similar number of additional patients had been identified, the incidence would have been 7.1 per 10⁵. The implication, if this were the case, would be a fall in the true incidence of colitis in the city over the 20 years from 7.1 to 6.3 per 10⁵. These figures contrast sharply with comparable data for Crohn’s disease in Cardiff, which show a rise in incidence,⁵ but the difference cannot simply be explained on the basis of greater accuracy in diagnosis.

Results from comparable studies on changes in the incidence of ulcerative colitis show variable results. In some, the incidence seems relatively stable (between 4 and 9 per 10⁵ in Sweden,⁶ USA,⁷ England,⁸ and Wales⁹), while other studies show an increase (Iceland,⁹ Scotland,¹⁰ Faroe Islands,¹¹ and Norway¹²). It is difficult to be sure whether those studies which show a rise in incidence reflect the true situation or a change in case ascertainment. We would place more confidence on quinquennial rather than annual figures because the latter are subject to considerable variation. In Japan, colitis is at least 10 times less common than in western Europe.^{13 14} The incidence values from various countries are given in Table II.

The incidence of colitis in Cardiff has shown little change over the 20 year period compared

Figure 3: Extent of ulcerative colitis, defined as distal, left sided, and total, at the time of diagnosis in 10 year age bands for 1968-87.

TABLE II Studies from different centres showing the incidence of ulcerative colitis

Centre	Date	Incidence (cases/10 ⁵ /yr)
Great Britain:		
Cardiff (present study)	1968-87	6.3
Oxford ^a	1951-60	6.5
North Tees ¹⁵	1971-77	15.1
Grampian region ⁹	1967-76	11.3
Lothian region ¹⁶	1968-71	2.6
	1976-79	4.0
High Wycombe ¹⁷	1976-84	6.7
Scandinavia:		
Faroe Islands ¹¹	1964-83	7.5
Iceland ⁸	1950-59	2.8
	1960-69	4.7
	1970-79	7.4
Sweden - Stockholm County ⁶	1955-59	1.7
	1975-79	4.3
Norway ¹⁸	1983-86	12.8
Europe:		
Netherlands - Zuid ¹⁹	1979-83	6.8
Germany - Ruhrgebiet ²⁰	1980-84	2.9*
Hungary - County Borsod ²¹	1963-72	3.1
	1972-83	3.1
Israel:		
Tel-Aviv-Jaffo ²²	1961-70	3.7
Beer Sheva ²³	1980-84	5.8
All		4.4
Israeli born		5.6
Afro-Asian born		10.8
European-American born		5.4
New Zealand ²⁴	1969-78	0.4
	Whites	15.0
	Polynesians	0.4
USA - Rochester, Minnesota ²	1960-79	0.4
Japan ^{14,24}	1980	0.4
South Africa - Capetown ²⁵	1980-84	5.0
	Whites	1.9
	Coloureds	17.0
	Jews	1.3
Czechoslovakia - North Bohemia ²⁶	1978	

*Excluding proctitis.

with the rise in Crohn's disease. The ratio of incidence for ulcerative colitis to Crohn's disease was 1:0.5 in 1968 and 1:1.3 in 1985. The true prevalence of colitis may be considerably higher than the values we have recorded in view of a recent exercise in Nottingham which identified additional asymptomatic patients with colitis as an incidental finding while screening middle aged subjects for colonic cancer. The additional patients identified in this study suggest that current figures on prevalence may be increased by as much as 30%.²⁷ Some care should be taken when comparing figures from different series

because the intensity with which patients are sought must inevitably affect the ultimate total; this phenomenon may well be a more general one in relation to other chronic disease states.

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