SHORT REPORTS

Familial prevalence of inflammatory bowel disease in relatives of patients with Crohn's disease

The current incidence of Crohn's disease in Cardiff is about 5/10^5/year[1] and relatives of patients develop the disease more often than the rest of the population. We have examined the prevalence of inflammatory bowel disease in first-degree relatives and spouses of 139 patients with Crohn's disease in Cardiff and have reviewed the case notes of those relatives who were thought to be affected.

Patients, methods, and results

In 1977 156 patients with Crohn's disease were living in the City of Cardiff (prevalence=55·7/10^5 population). This was established from data collected in a study of incidence between 1934 and 1977 based on a diagnostic index kept by hospitals in Cardiff.[1] One hundred and forty-seven patients alive in 1979 were asked to complete a questionnaire which related to family size and the occurrence of ulcerative colitis or Crohn's disease in the family. Questions related to the spouse and first-degree relatives, who included parents, siblings, and children over 15 years. The diagnosis in both patients and relatives was confirmed from hospital case notes using histological and radiological criteria.

Completed questionnaires were returned by 139 of the 147 patients. Thirteen patients had at least one first-degree relative with either Crohn's disease or ulcerative colitis. The diagnosis in the parents of two other patients was not confirmed, because one had diverticular disease and the other carcinoma of the colon. Eleven of the 437 siblings at risk had either ulcerative colitis or Crohn's disease, two of the 278 parents had ulcerative colitis, and one of the 152 children at risk also had colitis (table). Out of the 156 cases of Crohn's disease only one pair of brothers were both resident in the city at the time of diagnosis; the five other affected siblings were resident elsewhere. The expected number of cases of Crohn's disease in 869 first-degree relatives is 0·49. If one avoids counting the sibling pair twice then there were six cases recognised ($P<0·0002$, based on a Poisson distribution). If the number of affected relatives is considered as seven, or attention is restricted to siblings only, much higher levels of significance are obtained.

Inflammatory bowel disease in Cardiff in 1977

	No at risk	No of cases of ulcerative colitis	No of cases of Crohn's disease	Prevalence of Crohn's disease (cases/10^5 population)
Cardiff residents	280 100	—	156	55·7
Relatives of patients with Crohn's disease:				
Parents	278	2	0	0
Siblings	437	4	7	1601·8
Children over 15 years old	152	1	0	0
Spouses	87	1	0	0

The number of residents with ulcerative colitis is unknown as it has not been measured. The prevalence of Crohn's disease in relatives is 13 times greater than that in non-relatives.

Comment

Nine per cent of patients with Crohn's disease have a first-degree relative with either Crohn's disease or ulcerative colitis. The risk of siblings developing the disease is almost 30 times that in the total population of Cardiff, which has a high prevalence compared with the rest of Wales. While such a relative risk attains a high degree of statistical significance, the prevalence in first-degree relatives is not high enough to indicate a disease of simple Mendelian inheritance with high penetrance.[2] It is more likely that an external factor is responsible for the development of the condition in susceptible individuals. Not surprisingly, only two married couples with Crohn's disease have been reported.[3 4] If the condition occurred with the same frequency in spouses as in siblings only one case in the 87 spouses at risk would have been expected in this study.

Siblings and spouses experience similar diagnostic facilities and are of a comparable age, whereas many parents lived before Crohn's disease was widely recognised and many children may be too young to have developed the condition. The differential diagnosis between ulcerative colitis and Crohn's disease may be difficult to make, even in specialised centres, but Crohn's disease occurs with much greater frequency in relatives than would be expected by chance. Our study has shown that first-degree relatives have a much greater risk of developing Crohn's disease but the disease is unlikely to be due to a simple genetic effect. An external factor such as infection or diet probably plays a role.

1 Mayberry JF, Rhodes J, Hughes LE. Incidence of Crohn's disease in Cardiff between 1934 and 1977. *Gut* 1979;**20**:602-8.
2 Almy TP, Sherlock P. Genetic aspects of ulcerative colitis and regional enteritis. *Gastroenterology* 1966; **51**:757-63.
3 Whorwell PJ, Eade OE, Hossenbocus A, Bamforth J. Crohn's disease in a husband and wife. *Lancet* 1978;**2**:186-87.
4 Zetzel L. Crohn's disease in a husband and wife. *Lancet* 1978;**2**:583.

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Acute interstitial nephritis and erythroderma associated with diflunisal

Acute interstitial nephritis (AIN) is an uncommon renal disease which may be caused by drugs—for example, sulphonamides, phenindione, ampicillin, and methicillin.[1 2] Drug-induced interstitial nephritis usually presents as renal failure with haematuria, minimal proteinuria, fever, skin rashes, and eosinophilia. We report here a case of AIN presenting as acute oliguric renal failure, erythroderma, and eosinophilia after a course of diflunisal.

Case report

A 70-year-old woman was referred because of oliguric renal failure. Eight weeks before admission diflunisal 250 mg twice daily for two weeks had been prescribed for mild pain in her fingers. Two weeks after discontinuing the drug she developed urticaria, for which prochlorperazine 5 mg thrice daily, chlorpheniramine 4 mg thrice daily, and, later, prednisolone 15 mg daily were prescribed. The rash cleared but a week after stopping prednisolone it reappeared and she became anuric. Blood urea was 51·5 mmol/l (310 mg/100 ml) and potassium 6·3 mmol(mEq)/l. Peritoneal dialysis was started. There was no history of renal disease or allergy. She had a fever of 37·3°C; oedema of the legs, arms, face, trunk, and vulva; a red, itchy skin with widespread exfoliation; and a blood pressure of 170/90 mm Hg. Laboratory investigations showed haemoglobin 8·5 g/dl; white blood cells $12·4\times10^9$/l (12 400/mm^3); eosinophils $1·49\times10^9$/l (1490/mm^3); platelets 81×10^9/l (81 000/mm^3); ESR 12 mm in 1st h; total serum protein 51 g/l; albumin 22 g/l; serum asparate transaminase 15 IU/l; bilirubin 6 μmol/l (0·3 mg/100 ml); antistreptolysin O titre < 125 IU/ml; C3 56 mg/dl. Antinuclear factor, Wassermann reaction, and latex test for rheumatoid arthritis were all negative and Australia antigen was not detected. A catheter specimen of urine contained protein plus, white blood cells 40×10^6/l (40/mm^3), and red blood cells 240×10^6/l (240/mm^3). A high-dose intravenous urogram showed normal-sized kidneys and no obstruction. Renal biopsy showed normal glomeruli but a severe interstitial nephritis. The interstitium contained an intense infiltrate of lymphocytes, plasma cells, and eosinophils with much oedema and fibrosis. The tubules were normal in places but many areas were atrophic. Immunofluorescence showed linear deposition of C3 plus a granular deposition of IgM and IgG