SHORT REPORT

Incidence of paediatric inflammatory bowel disease in South Wales

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Crohn's disease (CD) and ulcerative colitis (UC) are chronic inflammatory bowel diseases (IBD) of unknown aetiology and most epidemiologists accept that there has been real increase in incidence of IBD in the developed countries during the last century.^{1 2}

Few studies have looked at the incidence and prevalence of childhood IBD across Europe.^{3 4} A Scottish study looking at the incidence of IBD (between 1968 and 1983) revealed a more than threefold increase in CD and a marginal fall in UC,⁵ with a recent report from the same country suggesting a continued rise in the incidence of both juvenile onset CD and UC.⁶ A study of IBD in the UK carried out in 1999–2000 by the British Paediatric Surveillance Unit (BPSU) suggested an estimated incidence of 5.3 per 100 000 children under the age of 16, equivalent to approximately 700 new cases per annum in the UK and Republic of Ireland, with CD being at least twice as common as UC.⁷

In a retrospective study from South Wales, UK, the reported incidence of childhood CD increased from 1.3 to 3.11 per 100 000 per year over an 11 year period (1983–93), with the incidence of UC remaining at 0.71 per 100 000 per year.⁸

It is not clear whether or not this increase in incidence has now levelled out. In order to ascertain the current trend in the incidence of IBD, we carried out a prospective study in the same region of South Wales (Cardiff and the Vale) between 1996 and 2003 (inclusive) as was previously studied.⁸

METHODS

A prospective study was undertaken to determine the incidence of childhood IBD over an eight year period (January 1996 to December 2003). All the children (under 16 years of age at the time of diagnosis) residing in a well defined health district (Cardiff and Vale) were included in our study.

The confirmation of diagnosis of CD, UC, or indeterminate colitis (IC) was based on the combination of laboratory indices (raised inflammatory markers), radiological investigations (barium studies and/or technetium white cell scan), and histological evidence at colonoscopy and/or upper gastrointestinal endoscopy as previously defined.⁸ We obtained up to date childhood population estimate figures of Cardiff and Vale from the Director of Public Health Medicine in Wales and thus calculated the incidence of paediatric CD, UC, and IC.

All children from Cardiff and Vale area are invariably referred to our paediatric gastroenterology tertiary care unit and are unlikely to be referred elsewhere. All new cases are entered prospectively on to our local Cardiff database. In order to capture all cases, adult gastroenterologists and surgeons in south Wales were asked each year whether any young people with IBD were under their care; in addition, we cross checked histopathology records in order to ensure that no cases of paediatric IBD were missed. No "missed" cases were discovered.

RESULTS

The population of Cardiff and Vale children less than 16 years of age has remained approximately 90 000 between the years 1996 and 2003 (varying only by 1500) as published annually by the National Public Health Service in Wales. Over this period, 39 (22 male) children satisfied the diagnostic criteria for IBD: 26 (67%) had CD, 11 (28%) UC, and 2 (5%) IC. The median age at diagnosis for all patients was 13 years with a range of 4–15 years (no difference in median age between CD and UC). Figures for each year over the eight year period were remarkably consistent, with 3–6 new cases of IBD presenting each year. The incidence of IBD over the eight year period was 5.4 (95% CI 3.69 to 7.40) per 100 000 per year, with the incidence of CD being 3.6 (2.46 to 5.29) cases per 100 000 per year of population (under 16) and the incidence of UC 1.5 (0.85 to 2.74) cases per 100 000 per year.

DISCUSSION

We have comprehensive epidemiological data on childhood IBD from a defined area in South Wales from 1983 to 2003. Our initial results from 1983 to 1993 suggested a 2–3-fold increase in the incidence of CD in the population,⁸ which appeared to be plateauing in a two year period (1995 to 1997) when the figures were looked at as part of an All Wales study.⁹ Our current study confirms that, in this geographical area, the incidence of paediatric IBD has indeed reached a plateau, with a consistent incidence over the previous eight years and no overall increase in prevalence from 1993, with incidence figures which exactly match those from the 1999 National BPSU survey for the UK.

We are very confident that these data are robust, having been cross checked in a number of ways and, having reviewed data from the UK Paediatric Register of Inflammatory Bowel Disease (personal communication), appear to be consistent for the whole of South Wales. It does appear that the previous dramatic rise reported in the area has reached a plateau, although there is still the same predominance of CD over UC and IC. It is interesting that there has been a small increase in the incidence of UC. There has been considerable debate in the adult and paediatric gastroenterology literature as to whether or not there is a continuing increase in paediatric CD, and we strongly feel from our 20 year study that the incidence is not continuing to rise dramatically in South Wales. We will continue to collect our data, and it is important that other areas in the UK report their experience over a prolonged period of time.

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Abbreviations: CD, Crohn's disease; IBD, inflammatory bowel disease; IC, indeterminate colitis; UC, ulcerative colitis

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REFERENCES

- 1 Logan RFA. Inflammatory bowel disease incidence: up, down or unchanged. *Gut* 1998;**42**:309–11.
- 2 Rose JDR, Roberts GM, Williams G, et al. Cardiff Crohn's disease jubilee: the incidence of 50 years. *Gut* 1988;**29**:346–51.
- 3 Olafsdottir EJ, Fluge G, Haug K. Chronic inflammatory bowel disease in children in Western Norway. *J Pediatr Gastroenterol Nutr* 1989;**8**:454–8.
- 4 Hildebrand H, Fredrikzon B, Holmquist L, et al. Chronic inflammatory bowel disease in children and adolescents in Sweden. *J Pediatr Gastroenterol Nutr* 1991;**13**:293–7.
- 5 Barton JR, Gillon S, Ferguson A. Incidence of inflammatory bowel disease in Scottish children between 1968 and 1983; marginal fall in ulcerative colitis, three-fold rise in Crohn's Disease. *Gut* 1989;**30**:618–22.
- 6 Armitage E, Drummond HE, Wilson DC, et al. Increasing incidence of both juvenile-onset Crohn's disease and ulcerative colitis in Scotland. *Eur J Gastroenterol Hepatol* 2001;**13**:1439–47.
- 7 Sawczako A, Sandhu BK, Logan RFA, et al. Prospective survey of childhood inflammatory bowel disease in the British Isles. *Lancet* 2001;**357**:1093–4.
- 8 Cosgrove M, Al-Atia RF, Jenkins HR. The epidemiology of paediatric inflammatory bowel disease. *Arch Dis Child* 1996;**74**:460–1.
- 9 Hassan K, Cowan FJ, Jenkins HR. The incidence of childhood inflammatory bowel disease in Wales. *Eur J Pediatr* 2000;**159**:261–3.

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Developmental aspects of 22q.11 deletion syndrome

The velocardiofacial syndrome (VCFS) and most cases of DiGeorge syndrome are caused by a microdeletion in chromosome 22q.11. The main clinical features of VCFS are cleft palate, congenital heart defects (most commonly truncus arteriosus, interruption of the aortic arch, tetralogy of Fallot and pulmonary atresia, or ventricular septal defect), distinct facial appearance, and learning difficulties; it occurs in one in 4000 live births. Intelligence varies from moderate learning disability to normal but language delay and hypernasal speech are common. Non-verbal skills may be affected more than verbal. A study in Leuven, Belgium (Ann Swillen and colleagues. *Developmental Medicine and Child Neurology* 2005;**47**:797–802; see also commentary, *ibid*: 796) has been concentrated on early motor development.

The study included eight boys and three girls (mean age 41 months) with VCFS including a congenital heart defect. A control group consisted of 15 boys and four girls (mean age 46 months) without the 22q.11 deletion but with similar heart defects. The Peabody Developmental Motor Scales-2 and the Child Behaviour Checklist were used to assess motor development and behaviour. Motor development scores were significantly lower in seven of eight subtests in the VCFS group. On the behavioural scale there was a significant difference between the groups on only one of 15 items (the VCFS children were more withdrawn).

In a Swedish study (Lena Niklasson and colleagues. *Developmental Medicine and Child Neurology* 2005;**47**:803–7) 14 boys and 16 girls with 22q 11 deletion syndrome (age range 7–13 years) had neuropsychological and neuropsychiatric assessments. Thirteen of the 30 children had learning disability and verbal intelligence was often better than performance intelligence. Attention deficit hyperactivity disorder (ADHD) was diagnosed in 13 children. Four of these 13 children also had autism spectrum disorder (ASD) and another four children had ASD without ADHD. Ability to sustain attention was impaired in the group as a whole.

Children with 22q.11 deletion syndrome have delayed early motor development and may later express a variety of neuropsychiatric disorders including ADHD, ASD, and learning difficulties.