Similar prevalence of coeliac disease in children and middle-aged adults in a district of Sweden

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SUMMARY Coeliac disease in children and adults is considered to be a variety of the same disorder. This gains epidemiological support in the present study, which reports on the observed prevalence of coeliac disease in an area of Sweden (population, 140 500). On 1 July 1981, the prevalence rate was found to be 104/100 000 (1:960) among children, and the same figure, 106/100 000 (1:950), was found for coeliac disease unaccompanied by dermatitis herpetiformis in the middle-aged population. The figures were obtained in patients seeking medical care and thus represent minimum rates, and it is likely that the actual prevalence of coeliac disease in Sweden will prove still higher.

It has become evident to most practising gastroenterologists that coeliac disease is more common than was previously thought. According to observations published during the past decade, this would seem particularly true for childhood coeliac disease at least in Europe where incidence rates in the order of 1–2% have been recorded in many countries including Ireland,1 Austria,2 Finland,3 and Sweden.4 Childhood coeliac disease, however, as defined by the ESPGAN,5 is believed to be a permanent condition, which implies at least similar rates in the adult population as in children. Most regard coeliac disease in children and adults as basically the same disorder,6 and Mortimer et al7 and others have presented evidence suggesting that adult coeliac disease originates in childhood. Rates obtained for adult coeliac disease in various parts of Europe,1 3 8 however, are consistently much lower than corresponding rates in children, implying that epidemiological evidence is lacking to support the concept of close similarities between the two varieties.

We were therefore interested to report on the prevalence of coeliac disease unaccompanied by dermatitis herpetiformis in children and adults in a district of Sweden served by us.

Methods

PATIENTS
The study concerns children and adults with proven coeliac disease who on 1 July 1981 were living in the Central Health District of Östergötland County in southern Sweden (Fig. 1). It is a mixed urban-rural area with a stable population of a total of 140 500 of whom 27 500 are children under 15 years of age (19 200 in the age interval 5–14 years). Some three-quarters reside in the city of Linköping where the only hospital of the district (a university hospital) is situated.

CHILDREN
Of 24 children diagnosed at the Department of Paediatrics since 1966, those 20 aged 5–14 years, 13 girls and seven boys, were considered for reasons stated below. All showed severe jejunal lesions at presentation, corresponding to grade IV according to Alexander,9 and have met the ESPGAN criteria for childhood coeliac disease5 except for three early cases whose dietary response was documented clinically. In short, the ESPGAN recognises coeliac disease as a permanent condition of gluten intolerance, with an initial 'flat' mucosa that recovers on a gluten-free diet and where reintroduction of gluten in the diet will produce a histological relapse within two years.
ADULTS
Fifty-five adults without concomitant dermatitis herpetiformis, 38 women and 17 men, had been revealed in the routine service at the Gastroenterology Unit at the Department of Internal Medicine since 1973, and were still living in the area. The diagnostic criteria (Table) were those outlined by Cluysenaer and van Tongeren. We found severe jejunal lesions corresponding to Alexander’s grades III and IV in 52 (95%). Out of 41 investigated, 33 (81%) showed steatorrhoea (mean, 63±43 mmol/d; normal, less than 20 mmol/d on a diet containing 100 g fat daily), while low serum folate levels were observed in 42 of 52 (81%). There were 21 patients (38%) who gave a definite history of coeliac disease in childhood. Out of the 55 adults, 53 were treated with a gluten-free diet, and by 1 July 1981 50 patients had undergone a second biopsy with marked improvement in 45 (90%). No one had required steroids or was otherwise classified clinically as a non-responder.

In neither department were screening procedures for coeliac disease routinely performed. None of the patients had been diagnosed outside the area concerned.

Table  Diagnostic criteria for adult coeliac disease

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<tr>
<td>A</td>
<td>Mucosal lesions in the small intestine compatible with coeliac disease</td>
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<tr>
<td>B (i)</td>
<td>Biochemical sign of malabsorption</td>
</tr>
<tr>
<td>B (ii)</td>
<td>A previous history suggestive of coeliac disease – for example, during childhood</td>
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<tr>
<td>B (iii)</td>
<td>Morphological improvement in the small intestinal mucosa on a gluten-free diet</td>
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A and at least two of B i–iii are required for the diagnosis.

Results
On 1 July 1981, the overall prevalence rate of coeliac disease in our area was calculated to be 56/100 000 (1:1 780), based on the number of patients attending our units for reasons other than dermatitis herpetiformis.

A prevalence rate of 104/100 000 (1:960) was found in children of five years and above. There are no valid figures available in the younger children in whom there usually remains a third biopsy to be done in order to confirm the tentative diagnosis.

The prevalence of coeliac disease seemed to vary greatly in various age-groups in the adult population (Fig. 2), with only few coeliacs appearing in the late
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teenage period and the third decade of life. The peak rate was observed in the middle-aged population, and among adults aged 45–54 years, the point prevalence was found to be 106/100 000 (1:950), virtually the same as obtained in children in the area.

Discussion

The incidence per annum of childhood coeliac disease has stayed fairly constant in the whole Ostergötland County (total population, 392 000) during 1968–1977, at a mean rate of 1·08 per 1000 live births (1·930), and we believe that the population under study may be representative for the whole of Sweden because similar figures have been observed elsewhere.4,11 Contrasting recent experience in England,12 childhood coeliac disease continues to be common in Sweden regardless of changes in infant feeding practices.13

We found similar high prevalence of coeliac disease in the middle-aged adults as in children, which is not explained by diagnostic bias. The jejunal lesions were severe in practically all adults, and signs of malabsorption were seen at the magnitude and frequency that are reported in most other series.10 Moreover, adding adults with dermatitis herpetiformis who have shown unequivocal improvement in the jejunum during gluten withdrawal, the peak rate of coeliac disease in adults would be still higher, 139/100 000 (1:720), calculated for the age interval 45–54 years.

Like Swinson and Levi,14 we think coeliac disease is currently undiagnosed, at least among adults, and this may provide a fair explanation for our variable adult rates, being imaginary rather than real and related to a tendency for adult coeliacs to attend after their third decade of life.10 15 Accordingly, we think it is justified to present our findings expressed as age-adjusted rates despite the admittedly small sample size, as all were diagnosed while seeking medical care.

The figures indicate minimum rates and an unknown number of children and adults with unrecognised coeliac disease must reside in the area. The actual prevalence of coeliac disease in Sweden has been suggested to be about 1:50016 and knowing that some coeliacs in the first place may seek advice outside our units for related illnesses including polymyositis17 and psychiatric disorders, notably depression,18 we favour an interdisciplinary approach in finding neglected adult coeliacs. Mental depression, for instance, appeared to account for most instances of disability pension in the adult series.18

In conclusion, our findings may yield some epidemiological support for coeliac disease in children and adults being the same disorder, provided it is lifelong. With respect to the disorder accompanying dermatitis herpetiformis, we need to know more about the natural history of the enteropathy before these patients can be treated as true coeliacs also in epidemiological studies.

References

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