

## Correspondence

### Long term prognosis of Crohn's disease with onset in childhood and adolescence

SIR,—In the April leading article,<sup>1</sup> the long term prognosis of Crohn's disease starting in childhood and adolescence was stated to be the same as that in adults, from which it might be assumed that age is of no significance when assessing the risk to life or the results of therapeutic trials. There is, however, strong evidence that it is not true. Data from Cardiff<sup>2</sup> suggests an 11-fold increase in the risks of death in those diagnosed between 10 and 19 years of age and from Birmingham<sup>3</sup> a 12-fold increase in the group less than 20 years at diagnosis. Results from the Mayo Clinic<sup>4</sup> showed a 12-fold increase in those under 21 years at onset 20 years later while data from both Stockholm<sup>5</sup> and Birmingham<sup>6,7</sup> shows a six-fold increase in those aged 29 or less at diagnosis while from Oxford<sup>8</sup> a 6.4-fold increase was found in those under the age of 40 at onset of symptoms when assessed five years later. Such increased risks contrast with the outlook in adults, particularly in those over the age of 40 at diagnosis when risks to life are not significantly different to those of the general population.<sup>2,3,7</sup>

There is also evidence that recurrences after a first definitive operation are more likely to occur in the younger patients<sup>9-11</sup>; others have found no such effect dependent upon age<sup>12-15</sup> but comparisons between adolescent groups and older groups were not made. In either event, neither the numbers under consideration nor the statistical data available are adequate to allow firm conclusions. Puntis *et al*<sup>16</sup> concluded that the outcome for adolescents with distal ileal  $\pm$  colonic involvement was similar to that in adults but also stated that recurrences were more frequent in children than in adults. Though they gave no data for the whole series, the cumulative recurrence rates of those with ileocolic involvement aged 16 or less at the onset of symptoms can be calculated to be significantly greater than those aged 30 or more<sup>17</sup> at five years and only just failing to reach significance at 10 years after the first definitive operation. Strong evidence has been supplied by Hellers<sup>5</sup> who reported that there was a significant increase in the cumulative recurrence rate among 284 patients younger than 25 years at the time of surgery compared with 184 patients older than 40 both at five and 10 years after the first definitive operation. Greenstein *et al*<sup>18</sup> also found a significant increase at five and 10 years after the first operation

in those aged 25 or less at onset compared with those with onset after 25. Our own experience<sup>7</sup> showed that there were significantly more recurrences in 39 patients aged 19 or less at diagnosis than in those over the age of 40. Fresh calculations show that 30 of these 39 patients who fulfilled the criteria for inclusion among the patients reported by Puntis *et al*<sup>16</sup> had a cumulative recurrence rate of 49% at five and 71% at 10 years significantly different to the rates of 22 and 34% for the 34 patients aged 40 or older at diagnosis.<sup>7</sup> It would appear reasonable to believe that young patients are likely to have more recurrences than their elders.

It is also suggested<sup>1</sup> that a more conservative surgical approach with preservation of as much bowel as possible should be adopted rather than the aggressive one alleged to be used in Birmingham. While I have no knowledge of the techniques used since 1977, extensive resection has never been advocated and the preservation of as much bowel as possible has always been advised even to the extent of section through involved areas in occasional patients.<sup>19,20</sup> Furthermore, reports of 25 cohorts from 18 centres covering more than 7000 patients produce no evidence that the percentage of patients undergoing definitive operations in Birmingham is any different from that in many other centres. Thus the percentage of patients undergoing such operations in 15 cohorts varied from 80–100% (mean follow up 9.4 years) while eight cohorts from six American centres embracing more than 3000 patients (mean follow up 6.2 years) varied from 36–70%. The percentages in Birmingham with follow ups from seven to 24.6 years reported over the last 30 years were 81, 88, 91, 92, 96.

The policy of any centre towards definitive surgery can also be gauged by the number of patient-years per operation. Thus, of the 18 cohorts in which the total number of definitive operations were recorded, the mean number of such patient years per operation was 7.22: for those 11 with follow up between five and 9.9 years 6.09 and for the seven with between 10 and 24.6 years follow up 7.25 with operative rates of 70, 81, 88, 91, 95, 96, and 100%. Four of these latter cohorts were reported from Birmingham with 9.1, 9.5, 9.7, and 10.2 patient-years per definitive operation. The data from which similar figures can be derived were not given by Puntis *et al*<sup>16</sup> but for the 30 aged 16 or less on onset who should have been included by them and who were followed for 26 years, there were 7.6 patient-years per operation, not significantly different from the mean of 18 cohorts in the literature. Indications for definitive operations in Crohn's disease are, in general, agreed universally but in some centres, the application of these

principles is too often delayed in the optimistic hope that medical therapy can achieve the unattainable.

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## References

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## Reply

SIR,—Thank you for giving me the opportunity to reply to the comments of Dr Cooke concerning the leading article on the prognosis of Crohn's disease in childhood and adolescence.<sup>1</sup> I admire the contribution Dr Cooke has made to our knowledge of Crohn's disease by his meticulous and long term follow up studies. It was precisely for this reason that I felt that the article written by his successors in Birmingham<sup>2</sup> was so valuable particularly as direct comparison was possible with a group of adult patients diagnosed and managed by the same team over a very prolonged period. Dr Cooke has concentrated his criticisms in three main areas; the retrospective nature of the Birmingham study, the mortality of childhood Crohn's disease, and the recurrence rate in this group.

The criticism made by Dr Cooke of any retrospective study, however carefully conducted, is clearly valid, but the medical career structure and financing of research make prospective longitudinal studies of chronic diseases difficult to perform.

The long term prognosis and mortality of children with Crohn's disease is controversial, but the results from Birmingham certainly suggest the outlook for the majority of such patients is good. The thrust of the leading article was to compare patients presenting in a paediatric age group with those first seen by adult gastroenterologists. A considerable body of work does suggest that age at diagnosis has an influence on the mortality although this is not accepted by all authors.<sup>3-4</sup> Cooke himself has shown that the ratio of observed to expected mortality in the 5-29 year old age group (4.1) was similar to that in the 30-44 age group (3.7) although in older patients this ratio was not increased. Therefore young patients who form the majority of cases seen by gastroenterologists have a similar mortality to those seen by paediatricians. Perhaps the leader should have emphasised that the mortality of patients presenting with Crohn's disease in late or middle age may not differ from that of the general population. Data must exist in the Birmingham study to amplify this point. Three of the references cited by Cooke<sup>5-7</sup> in favour of an increased mortality in patients referred to earlier studies from Birmingham recently updated by Puntis *et al.* Cooke has previously shown<sup>7</sup> that whatever the age at diagnosis the relative risks of dying decreases as the follow up increases presumably because of a high mortality in the initial years after diagnosis. Thus it is perhaps not surprising that the most recent data<sup>2</sup> should be more encouraging than his previous studies.<sup>5-7</sup> The studies from Cardiff<sup>8</sup> and Mayo Clinic<sup>9</sup> referred to by Dr Cooke were not included in the discussion of the prognosis of Crohn's disease in