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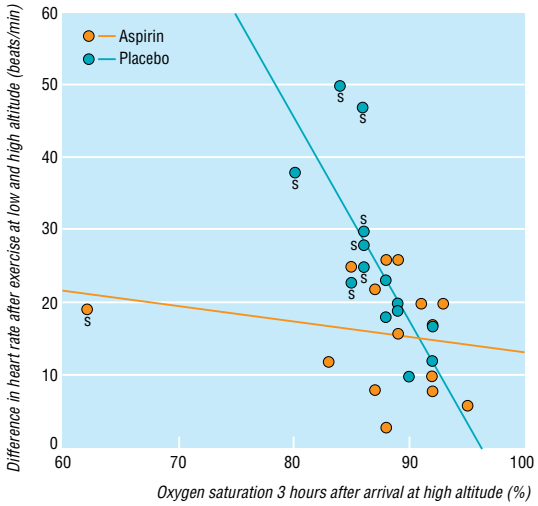

Relation between arterial oxygen saturation values 3 hours after arrival at high altitude, and difference in heart rate after exercise at high and low altitudes in subjects taking placebo or aspirin. s shows subjects who developed headache at high altitude

tended to be higher ($P=0.07$). In the placebo group, the difference in heart rate at high altitude was positively correlated with maximum headache scores ($r=0.8$, $P<0.01$) and inversely related to saturation values 3 hours after arrival at high altitude ($r=-0.8$, $P<0.01$; figure).

Comment

The incidence of headache at high altitude increases when arterial oxygen saturation and associated oxygen partial pressure decline with increasing altitude.[2] In this study, however, aspirin prevented headache without improving oxygenation. Pretreatment with aspirin raised the headache threshold, which was indicated by toleration of lower saturation values. Moreover, intake of aspirin was associated with less pronounced cardiorespiratory responses to short term exercise at high altitude. Since acute hypoxia augments prostaglandin concentrations,[3] and prostaglandins increase ergoreceptor activation and accompanying sympathetic stimulation,[4] aspirin probably prevents headache by diminishing these responses. Prostaglandins also enhance nociception, and reduced hyperalgesia may therefore have contributed additionally to the prophylactic efficacy of aspirin. Nevertheless, within the first few days of exposure to high altitude, symptoms of acute mountain sickness usually disappear even without drugs. Simultaneously, sympathetic responsiveness decreases due to desensitisation of adrenoceptors,[5] again indicating some relation between sympathetic activity and development of headaches at high altitude. If this relation is true, aspirin may support adaptation to high altitude by reducing sympathetic activity mediated by prostaglandins.

Contributors: MB designed the study, examined the subjects, did exercise testing, performed the statistical analysis and took various measurements. RL did the headache scoring and supervised the health of the subjects. WN undertook the randomisation, distribution of tablets, control of data and statistics. MP took various measurements (blood sampling)and did exercise testing.

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Conflict of interest: None.

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Prevalence of inflammatory bowel disease in British 26 year olds: national longitudinal birth cohort

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Inflammatory bowel disease has become more common in developed countries this century. Mayberry et al reported incidences of Crohn's disease in Wales of 0.18 cases/10^5/year in the 1930s and 5.95 cases/10^5/year in the 1970s.[1] We investigated the prevalence of inflammatory bowel disease at age 26 years in a nationally representative birth cohort. Associations of sex and social class with risk of the disease have previously been shown,[1–3] and these were also investigated.

Subjects, methods, and results

A postal survey of the 1970 British cohort study was conducted in 1995-6 among individuals aged 25 or 26 years, asking if respondents had a diagnosis of Crohn's disease or ulcerative colitis. The cohort study is a longitudinal study of those living in England, Scotland, and Wales born 5 to 11 April 1970.[4] The target population was estimated as 16 000, and we sent questionnaires to the 13 099 cohort members whom we traced. In all, 9803 completed questionnaires were returned; 309 addresses were identified as no longer current; and 12 people refused to participate. Excluding invalid and untraced addresses, the response rate was 77%. The social statistics research unit at City University, London, provided most (7430) of the addresses. To minimise bias, we traced the remaining 2373 cohort members through a letter forwarding service provided by the Driver and Vehicle Licensing Agency. The cohort remained largely representative, with some loss from the most disadvantaged groups: the proportion in social class V at birth dropped from 6.4% to 4.7% in the respondents.

Inflammatory bowel disease among 26 year olds in 1970 British cohort study. Values are numbers (%) unless stated otherwise

Characteristics	No inflammatory bowel disease	Crohn's disease		Ulcerative colitis	
		All cases	Confirmed	All cases	Confirmed
Social class:					
I	504 (5.2)	1 (3)		2 (9)	1 (8)
II	1204 (12.3)	4 (13)	3 (14)	3 (14)	3 (25)
III Non-manual	1318 (13.5)	5 (17)	5 (24)		
III Manual	3990 (40.9)	11 (37)	9 (43)	10 (46)	4 (33)
IV	1331 (13.6)	4 (13)	2 (10)	3 (14)	2 (17)
V	456 (4.7)	1 (3)	1 (5)	1 (5)	
Other	118 (1.2)				
Unsupported*	36 (0.4)				
Missing	794 (8.1)	4 (13)	1 (5)	3 (14)	2 (17)
Sex:					
Male	4834 (50)	14 (47)	9 (43)	13 (59)	7 (58)
Female	4917 (50)	16 (53)	12 (57)	9 (41)	5 (42)
Total	9751 (100)	30 (100)	21 (100)	22 (100)	12 (100)
Prevalence per 10 000 (95% CI)		29.8 (19.0 to 40.6)†	21.4 (12.3 to 30.6)	19.4 (10.5 to 28.1)†	12.2 (5.3 to 19.2)

*Single mothers who were not working—social class could not be assigned on the basis of current or previous occupation.
†Assuming that the unconfirmed cases have the same disease specific, false positive rates as the entire sample.

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Cohort members who reported inflammatory bowel disease were contacted again for details of their diagnosis and permission to contact their physicians. If permission was not granted, diagnosis was not confirmed. The registrar general's social class was based on father's occupation, collected prospectively in 1970.

The table shows the prevalence of Crohn's disease and ulcerative colitis in the cohort, by social class and age. Thirty two and 27 cohort members reported Crohn's disease and ulcerative colitis respectively. For two reports of Crohn's disease and five of ulcerative colitis, the diagnosis was subsequently refuted by cohort members themselves or their physicians. The diagnosis was confirmed for 21 cohort members with Crohn's disease and 12 with ulcerative colitis. On the basis of physician confirmed cases only, the prevalence per 10 000 was 21.4 (95% confidence interval 12.3 to 30.6) for Crohn's disease, 12.24 (5.3 to 19.2) for ulcerative colitis, and 33.7 (22.2 to 45.1) for inflammatory bowel disease. If it is assumed that the unconfirmed cases had the same disease specific, false positive rates as the entire sample, the estimated prevalences per 10 000 were 29.8 (19.0 to 40.6), 19.4 (10.5 to 28.1), and 49.2 (35.3 to 63.0) respectively.

Social class was modelled by using logistic regression, both as a six category ordinal variable and as a binary (manual *v* non-manual) dummy. Neither social class nor sex was significantly associated with Crohn's disease, ulcerative colitis, or both diseases combined ($P > 0.1$).

Comment

We found a higher prevalence for Crohn's disease and for ulcerative colitis than other studies in Britain have found for comparable age groups (Keighley et al found a prevalence of 6.49/10 000 for Crohn's disease among 25-29 year olds in 1973[2] and Evans et al 7.59/10 000 for ulcerative colitis among 25-34 year olds in 1960[3]). In part, this may be because a general population based sample was used, but it is also likely to reflect a genuine rise in the prevalence of inflammatory bowel disease, particularly for Crohn's disease. The lack of significant association of both social class and sex with inflammatory bowel disease may be a function of the small number of cases. Alternatively, there may be a homogenisation of the pattern of exposure to risk factors for inflammatory bowel disease that reflects improved material conditions in infancy in comparison with those born earlier this century: improved conditions in early life have been identified as a risk for later inflammatory bowel disease.[5] This is a relatively young cohort, and we expect the prevalence of inflammatory bowel disease to continue rising both in the 1970 British cohort study and in the general population.

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Contributors: SMM wrote the original draft of the paper, planned the data collection, was responsible for the data analysis, participated in all components of the study, and will act as guarantor for the paper. All authors contributed to the design, data interpretation, and writing of the paper. DLM was responsible for ensuring confirmation of the diagnosis of Crohn's disease or ulcerative colitis in cohort members who reported having inflammatory bowel disease. NPT and JS assisted in data collection and data preparation. REP and AJW were responsible for originating and overseeing the study.

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Conflict of interests: None.

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Correction

Quantitative systematic review of topically applied non-steroidal anti-inflammatory drugs

An editorial error occurred in this paper by Moore et al (31 January, 333-8). The *x* axis of figure 3, the percentage with successful outcome, should have been divided as 0, 20, 40, 60, 80, and 100 [not 0.1, 1, 10, 100, 10, 100, as published].