Abnormality rates on barium meal examination in Asian and white patients by age, sex, means of referral, and type of abnormality

Variable	Proportion (%) of patients		χ^2 For difference between Asian and white patients
	Asian	White	
Age (years)*:			
<45	38/165 (23)	43/125 (34)	4·6, df=1, P<0·05
45-59	12/66 (18)	38/85 (45)	11·8, df=1, P<0·001
≥60	21/51 (41)	74/121 (61)	5·8, df=1, P<0·025
Sex:			
Male	41/157 (26)	78/175 (45)	12·3, df=1, P<0·0005
Female	30/129 (23)	77/156 (49)	20·5, df=1, P<0·0005
Means of referral:			
By general practitioner	59/225 (26)	77/176 (44)	13·6, df=1, P<0·0005
By outpatients department	11/60 (18)	76/152 (50)	17·8, df=1, P<0·0005
As inpatient	1/1	2/3	
Abnormality:			
Major	35/286 (12)	68/331 (21)	7·6, df=1, P<0·001
Minor	36/286 (13)	87/331 (26)	18·0, df=1, P<0·0005
Total	71/286 (25)	155/331 (47)	32·0, df=1, P<0·0005

*Age was not recorded in four Asian patients.

Of 1362 patients attending for barium meal examination, 960 (70·5%) were white and 361 (26·5%) were Asian, with 41 others (3·0%). Radiological reports of 286 Asian and 331 white patients were retrieved and analysed. The mean age of Asian patients was lower than that of white patients (44·5 *v* 51·0 years). In addition, the proportion of young patients (those under 45) was significantly higher in Asians (59% (165/282) *v* 38% (125/331) in white patients, difference 21% (95% confidence interval 13·2% to 28·8%); $\chi^2=32·7$, df=2, P<0·001). No significant difference was found between men and women in either racial group. Over three quarters of Asian patients (79% (225/286)) had been referred directly by their general practitioner compared with just over half of white patients (53% (176/331), difference 26% (18·7% to 33·3%); $\chi^2=42·7$, df=1, P<0·0005). There was, however, no significant difference in the rate of abnormality between patients referred by general practitioners and those from hospital outpatient departments in either racial group, and there was no excess of referrals from any particular source.

Abnormality rates were higher in white patients, the overall rate being 47% compared with 25% in Asians (difference 22% (14·7% to 29·4%); χ^2 32·0, df=1, P<0·001) (table). The age standardised rate for Asians was 28%, giving a relative excess of abnormalities in white patients of 89% using crude rates and 65% after standardising for age. Rates of both major and minor abnormalities were significantly increased in the white patients (table).

Comment

Over a quarter (27%) of patients attending for barium meal examination were Asian, although Asians constituted 16% of the hospital population in the 1991 census[1]; this gives a relative excess of attendances among Asians of 68%. Asians may consult a general practitioner more often, rates of up to three times those of white patients being seen among Pakistani men, and Asians are also more likely to have repeated consultations.[2-4] In our study 79% of Asian and 53% of white patients were referred directly by their general practitioner, implying that patient management may vary in different racial groups. Overall rates of abnormality were, however, similar regardless of the means of referral.

Young patients (under 45) were over-represented in the Asian group, an age group in which abnormality rates are low,[5] but significant differences were found in all age groups and after standardising for age. Communication difficulties in some Asian patients may contribute to inaccuracies in clinical diagnosis, but such difficulties are less likely in younger patients, among whom the differences remain striking.

Variations in prevalence of gastrointestinal symptoms and differing patterns of patient presentation and patient management are all factors that could be examined in more detail in the community and in hospitals, and they might provide opportunities to optimise investigation and management of patients in different racial groups.

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1 Office of Population Censuses and Surveys. *County monitors*. London: OPCS, 1992.
2 Balarajan R, Yuen P, Soni Raleigh V. Ethnic differences in general practitioner consultations. *BMJ* 1989;299:958-60.
3 Gillam SJ, Jarman B, White P, Law R. Ethnic differences in consultation rates in urban general practice. *BMJ* 1989;299:953-7.
4 Johnson MRD, Cross M, Cardew SA. Inner city residents, ethnic minorities and primary health care. *Postgrad Med J* 1983;59:664-7.
5 Williams B, Luckas M, Ellingham JHM, Dain A, Wicks ACB. Do young patients with dyspepsia need investigation? *Lancet* 1988;ii:1349-51.

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Management of dyspepsia among Asians by general practitioners in East London

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The London Borough of Tower Hamlets has a large Asian community. The largest ethnic groups in the borough are white (64·4%) and south Asian (25·7%)—comprising Bangladeshi (22·9%), Indian, Pakistani, and other Asian subgroups.[1] Use of health services varies between ethnic groups. Asian patients, for example, consult their general practitioners more often than white patients do.[2] Debate continues about whether this can be explained solely by a higher prevalence of illness.[3] We used ethnic data from the 1991 census to study whether the number of referrals from general practitioners for investigation of dyspepsia was disproportionately great for the size of the Asian population in Tower Hamlets and, if so, whether this was because of increased dyspeptic disease.

Patients, methods, and results

We reviewed 834 barium meal and swallow examinations requested by general practitioners from October 1991 to September 1992 at the Royal London and Mile End Hospitals. We also reviewed the results of 417 endoscopies requested by general practitioners over the same time, which followed the introduction of an open access upper gastrointestinal endoscopy service in October 1991. The ethnic group of patients was classified as Asian or other according to name, and the populations were analysed by age as under 45 years or 45 years and over. Outcome was subdivided into suspected malignancies, major abnormalities (suspected malignancies, gastric and duodenal ulcer and scarring, oesophagitis, and gastric erosions); and minor abnormalities (gastritis, duodenitis, hiatus hernia, reflux, etc).[4] We also related endoscopic appearance to the result of urease tests for *Helicobacter pylori*.

The table shows a significantly higher referral rate for barium studies in Asian patients, with fewer

Comparison of referral rates for and outcome of barium meal examination and endoscopy in Asian and other populations in Tower Hamlets, October 1991-September 1992. Values are proportions (with percentages in parentheses) unless stated otherwise

	Asian	Other	Difference in rates (95% confidence interval between Asians and others	P value
	Barium meal examination			
Total population:	41 604 (26)	119 460 (74)		
Referrals:				
Total No	312 (37)	522 (63)		
Rate (per 1000)	7·5	4·4	3·1 (2·2 to 4·0)	<0·001
Abnormal results:				
Total No	138/312 (44)	338/522 (65)	−21 (−27 to −14)	<0·001
Rate (per 1000)	3·3	2·8	0·5 (−0·1 to 1·1)	0·13
Type of abnormality:				
Suspected malignancies	3/312 (1)	28/522 (5)	−4 (−7 to −2)	0·002
⩾1 Major abnormalities	70/312 (22)	163/522 (31)	−9 (−15 to −3)	0·006
⩾1 Minor abnormalities	88/312 (28)	242/522 (46)	−18 (−25 to −12)	<0·001
Population aged <45 years	35 490 (32)	75 229 (68)		
Referrals:				
Total No	198/312 (63)	188/522 (36)	37 (31 to 44)	<0·001
Rate (per 1000)	5·6	2·5	3·1 (2·2 to 3·9)	<0·001
Abnormal results:				
Total No	76/198 (38)	106/188 (56)	−18 (−28 to −8)	<0·001
	Endoscopy			
Total population:	41 604 (26)	119 460 (74)		
Referrals:				
Total No	129 (31)	288 (69)		
Rate (per 1000)	3·1	2·4	0·7 (0·1 to 1·3)	0·02
Abnormal results:				
Macroscopic changes:				
Any abnormality	90/129 (70)	225/288 (78)	−8 (−18 to 1)	0·09
⩾1 Major abnormalities	81/129 (63)	210/288 (73)	−10 (0 to −20)	0·05
⩾1 Minor abnormalities	15/129 (12)	81/288 (28)	−16 (−9 to −24)	<0·001
Rate (per 1000)	2·2	1·9	0·3 (−0·2 to 0·8)	0·3
Positive for urease:				
Macroscopically normal	6/10 (60)	5/13 (38)	22 (−19 to 62)	0·4
Macroscopically abnormal	40/54 (74)	80/113 (71)	3 (−11 to 18)	0·8
Total No	46/64 (72)	85/126 (67)	4 (−9 to 18)	0·6
Age <45 years	35 490 (32)	75 229 (68)		
Referrals:				
Total No	81/129 (63)	91/288 (32)		
Rate (per 1000)	2·3	1·2	1·1 (0·5 to 1·6)	<0·001

abnormal results, suspected malignancies, and major and minor abnormalities among them than might be expected from the size of the population. The proportion of patients with disease at barium examination per 1000 population was, however, similar in the two groups. Significantly more Asians under 45 than others under 45 were referred, but they had significantly fewer abnormal results.

The referral rate for endoscopy was significantly higher among Asians than the other group. The pattern of abnormalities was similar to that found in the barium studies, and the proportion of the population with abnormal results in the two groups was similar.

Comment

Our findings suggest disproportionate referral for investigation in Asians that is not explained by the extent of dyspeptic disease. The proportion of abnormal results from barium studies in the whole population (57%) is similar to that in the study of Conry *et al* (58%),[4] suggesting that high referral is led by factors at presentation rather than by a low threshold for referral. The available evidence suggests that census underenumeration is unlikely to be an important factor.[5]

There was no evidence for different prevalence of *H pylori* in Asian and other populations from our study. The greater proportion of investigations in younger Asians—who generally speak more fluent English—is evidence against language difficulties being an important factor.

Somatisation, or expression of psychological distress in somatic terms, seems to be commoner in Asians than other racial groups,[2] though further study is required to determine whether it is a factor. Our study does not control for greater socioeconomic deprivation as reflected in unemployment among Asian men,[1] which may also be relevant.

Our findings have practical implications, raising concerns about radiation dose in young Asians. They indicate that the reasons for presentation with dyspeptic symptoms in Asian patients may be more complex than in other patients and that this should influence investigation. In wider terms there is a need for caution in how quality of health care for ethnic minorities is compared. Greater use of hospital services such as radiology or endoscopy may not necessarily indicate improved health care.

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1 Office of Population Censuses and Surveys. *Census county report: Inner London.* Part 1. Vol 1. London: HMSO, 1993:tables 6 and 9.
2 Murray J, Williams P. Self-reported illness and general practice consultations in Asian-born and British-born residents of West London. *Soc Psychiatry* 1986;21:139-45.
3 Balarajan R, Yuen P, Soni Raleigh V. Ethnic differences in general practitioner consultations. *BMJ* 1989;299:958-60.
4 Conry BG, McLean AM, Farthing MJG. Diagnostic and therapeutic efficacy of barium meal examination: a prospective evaluation in general practice. *BMJ* 1989;299:1443-5.
5 Office of Population Censuses and Surveys. *Census user guide 58: Undercoverage in Great Britain.* London: HMSO, 1994:table 7.

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Corrections

Relative mortality from overdose from antidepressants

A printer's error, an editorial error, and an authors' error occurred in this article by John A Henry and colleagues (28 January, pp 221-4). In table II the figure for deaths per million prescriptions for tricyclic drugs 1987-92 should have read 34·14 (32·47 to 35·86), and all groups of antidepressants were significant at P<0·001. Table III should have appeared as follows.

TABLE III—*Fatal poisonings and deaths per million defined daily doses for deaths from single antidepressants, by groups of drug. Values in parentheses are 95% confidence intervals*

Antidepressant	Observed deaths 1987-92	Expected deaths 1987-92	No of defined daily doses (millions) 1987-92	χ^2 value	Deaths per million defined daily doses 1987-92
Tricyclic drugs	1563	1384·5	1218·7	23·01	1·283 (1·219 to 1·347)*
Monoamine oxidase inhibitors	12	39·96	34·29	18·66	0·350 (0·152 to 0·548)*
Atypical drugs	26	89·10	78·43	44·69	0·332 (0·204 to 0·460)*
Selective serotonin reuptake inhibitors	5	93·41	82·22	83·68	0·061 (0·008 to 0·114)*
All antidepressants	1606	1606	1413·633		1·136

*P<0·001 (difference from all by χ^2 test).

Childhood leukaemia and non-Hodgkin's lymphoma near large rural construction sites, with a comparison with Sellafield nuclear site

An editorial error occurred in this paper by L J Kinlen and colleagues (25 March, pp 763-8). In table VI the heading for the last four columns should be "% Of population resident in parishes [not families] with:".