

## Editorials

## In what way may race, ethnicity or culture influence asthma outcomes?

In a civilised society it is important that all those in need of health care should have equal access to it and benefit equally from that which is available. There have been some suggestions that asthma outcomes in the UK for those of South Asian origin may be less good than for the rest of the population. This is a subject confounded by generalisations and by statements which are often based on minimal evidence. Caution is needed in comparing local and national studies and studies done many years apart.

There are two key questions regarding asthma and ethnic minority groups, especially Asians. (1) Does the prevalence of asthma vary between ethnic minorities such as South Asians living in the UK? (2) Are the outcomes for asthma care worse for these groups and, if so, why and how do we improve the situation?

The first question is not the main purpose of this editorial but in the USA physician diagnosed asthma has been reported to affect 13.4% of black children and 9.7% of white children.<sup>1</sup> Black children with asthma have also been reported to have significantly greater restrictions of activity, fewer contacts with doctors, and to be admitted to hospital more frequently than white children with asthma.<sup>2</sup> In parallel with this increased suffering among African American children is an increased adult mortality due to asthma, and the death rate has been reported to be rising more quickly in African Americans than white Americans.<sup>3</sup>

African Americans constitute approximately 12% of the US population. In the UK ethnic minority groups represent 6.4% of the population and the single largest subgroups are those who came originally from India, Pakistan, and Bangladesh (either directly or via Africa) who represent 3.0% of the total population. (These are subsequently referred to collectively as South Asians except where quoted studies have referred to them differently). Certain conditions such as ischaemic heart disease, diabetes, hypertension, vitamin D deficiency, tuberculosis, and thalassaemia are more common in this population<sup>4-5</sup> but information regarding the prevalence of asthma is less clear cut. Some studies have suggested a higher prevalence of asthma among Asians than white Europeans,<sup>6-8</sup> some a lower prevalence,<sup>9-10</sup> and two studies have shown no difference.<sup>11-12</sup>

To try to circumvent problems of prevalence assessed by doctor diagnosis, self-reported wheeze or prescribing habits, the prevalence of exercise induced bronchoconstriction amongst British children has been studied. When analysed according to ethnicity the data showed that South Asian children were 3.6 times more likely to have exercise induced bronchoconstriction than white inner city children.<sup>13</sup> The most recent UK study<sup>14</sup> used language link workers and health visitors to look at the prevalence of asthma in primary care and showed higher rates among those from the Indian subcontinent (ISC) than in earlier published studies, but with no correlation between prevalence and country of origin or time in the UK. However, this study showed that

South Asians born in the UK were more likely to describe regular symptoms and be on regular treatment than those born abroad whose symptoms and medication use was directly related to the time they had been in the UK. This study raises the question as to whether the condition may be underdiagnosed if intensive efforts at effective communication are not used. The greater reporting of regular symptoms and regular use of medication with duration of time in the UK may suggest either an effect of environment worsening symptoms or initial underreporting, underutilisation of health care, or underprescribing. Indeed, underdiagnosis of asthma and undertreatment has been shown in another inner city study<sup>15</sup> where children from the ISC were less likely to receive both  $\beta$  agonists and anti-inflammatory treatments for their asthma. Asians with asthma also have higher hospital admission rates for asthma with readmission rates no higher than for those not from the ISC.<sup>16</sup>

In the light of these differences we need to look at a number of further points. Do these differences reflect:

- (1) intrinsic differences in severity or type of disease;
- (2) the effect of lifestyle or environmental factors;
- (3) cultural attitudes;
- (4) communication problems;
- (5) the doctor/patient interaction?

The pattern, type, and severity of some diseases such as coronary artery disease are different in South Asians living in the UK than in the rest of the population, but there is little evidence to suggest that the same is true for asthma. Patients from the ISC admitted to hospital with asthma have no more severe disease than those from other ethnic or racial backgrounds.<sup>16-17</sup> Studies of asthmatic patients in India have suggested that those with the condition have similar ages of onset, sex distribution, associated atopic disease, and allergic history to those seen elsewhere,<sup>18</sup> and comparisons of adult Asian immigrants with white asthmatics attending the same asthma clinic in the UK have shown similar skin prick test reactions to common allergens and treatment needs.<sup>19</sup> However, the degree to which a westernised life style is adopted may be associated with differing prevalences of atopy and bronchial hyperactivity and, in one study, the more exclusively Asian the diet, the lower the risk of hyperreactivity and atopy. The possibility of diet merely being a marker for some other environmental change is not excluded.<sup>20</sup> Paradoxically, some foods such as capsaicin found in chilli peppers and betel nuts used widely by Asians are known to cause bronchoconstriction.<sup>21-22</sup>

If the suggestion is that diagnosis may be delayed, that treatment may be suboptimal, and that admission rates for severe asthma are higher amongst Asians, and if this cannot be explained by something intrinsic to the disease itself, the hypothesis must be that such outcomes in some way reflect either cultural factors, communication, or some other aspect of the health professional/patient interaction. This is now the area of greatest interest and concern.

Linguistic barriers may have been overstated in the past. Even in 1989 studies of patients from the ISC attending a Birmingham hospital outpatients department showed that 76 of the 150 patients studied could speak English and 53 could read it as well. When the 13–28 age group was studied, all of the men and two thirds of the women could speak English and these proportions are likely to have improved considerably over the decade or so since that study.<sup>23</sup> A 1993 study of 500 Asians in Blackburn found that only 12.5% reported communication difficulties in primary care<sup>24</sup> and this is likely to have been minimised by an understandable and sensible migration of patients to doctors with whom they can communicate. The minority with linguistic problems may be diminishing but, in areas where their needs cannot be met by doctors speaking a common language, interpreters and materials in Asian languages may be important and the availability of interpreters is often limited.<sup>25</sup> Checklists for appropriate medical interpretation have been published and these are designed to prevent ambiguities and avoid mistakes and assumptions creeping into the interpretation process.<sup>26</sup>

How important are cultural as opposed to linguistic factors? In studies in India mothers have expressed concern and denial when confronted with a diagnostic label of asthma but there is very little other substantiated data on cultural barriers to good care.<sup>27</sup> Previous work by Moudgil and Honeybourne has revealed that, when comparing patients from the ISC with white European patients living in the same area of socioeconomic deprivation, there were negligible differences in the content of prescriptions between the two groups but patients from the ISC were much less likely to report understanding their medication or to have been involved in self-management initiatives.<sup>28</sup> A further study by Moudgil *et al* reported in this issue of *Thorax* has attempted to improve this situation by offering patients from the ISC and white Europeans from the same areas optimisation of medicines and asthma education.<sup>29</sup> Compared with the control group, quality of life scores were improved in both groups of patients but significant improvements in terms of reduced hospital admissions, GP consultations, and use of rescue steroid tablets were only seen in the white European intervention group. The report tells us too little of what was involved in the education and training in self-management skills, but results of a recent systematic review of patient education and self-management<sup>30</sup> suggest that patient education and self-management training, especially if it involved the issuing of a written action plan, should have led to a significant improvement in the outcomes measured. That it did not is unlikely to reflect linguistic difficulties because the intervention was offered in English, Punjabi, Hindi, or Urdu and backed up with translated documents. Further research is therefore now needed to determine whether there is some cultural barrier in patients from the ISC to taking control of their own condition, or whether self-management training needs to be offered in a different way to these patients than to others. Perhaps reading levels (literacy) were not equivalent in the two groups and this has been related to a poorer knowledge of both asthma and inhaler usage.<sup>31</sup> The fact that there was a trend towards improvement, even in those from the ISC, suggests that a more intensive programme might have been more helpful.

In conclusion, asthma may be slightly more common in South Asians living in the UK, but it may be underdiagnosed and undertreated. Hospital admission rates may be higher than in the rest of the population but this is unlikely to reflect severity and, indeed, it is unlikely that there are any specific differences in the clinical pattern of the disease in Asians than in other groups of the population. Linguistic and cultural problems may have been overstated in the

past. The high hospital admission rates may reflect a lesser use of self-management plans by Asian patients. This, in turn, may reflect less patient education and self-management training being offered to these patients, possibly because they attend smaller practices with large lists and possibly because of less access to practice nurses. However, even when education and self-management training is offered in an appropriate manner, the same benefits are not seen as in white Europeans. Whether this reflects some cultural barrier to self-care or to some other factors is not clear. Further research needs to focus specifically on the doctor/patient interaction within the consultation and to look at how best skills in self-monitoring and self-treatment may be acquired.

The author thanks Professor Peter Burney and Drs Chris Griffiths and Shabir Hussein for helpful conversations on this subject.

M R PARTRIDGE

*Chest Clinic, Whipps Cross Hospital,  
London E11 1NR, UK*

- George PJ, Mullaly DI, Evans RE. National survey of prevalence of asthma amongst children in the United States 1976–1980. *Pediatrics* 1988;81:1–7.
- Taylor WR, Newacheck PW. Impact of childhood asthma on health. *Pediatrics* 1992;90:657–62.
- Coultas DM, Gong H, Grad R, *et al*. Respiratory diseases in minorities of the United States. *Am J Respir Crit Care Med* 1993;149:93–131.
- McKenzie PM, Marmot MG. Mortality from coronary heart disease in Asian communities in London. *BMJ* 1988;297:903.
- Mather HM, Keen IT. Southall diabetes survey: prevalence of known diabetes. *BMJ* 1985;291:1081–4.
- Spears J. The prevalence of allergic diseases in young British born school children of different ethnic origins. *J R Coll Gen Pract* 1975;25:282–5.
- Jackson SHD, Banman LT, Bevers DG. Ethnic differences in respiratory disease. *Postgrad Med J* 1981;57:777–8.
- Donaldson LJ, Taylor JB. Pattern of Asian and non Asian morbidity in hospitals. *BMJ* 1983;286:949–51.
- Smith JM, Harding LR, Cumming G. The changing prevalence of asthma in school children. *Clin Allergy* 1971;1:57–61.
- Smith JM. The prevalence of asthma and wheezing in children. *Br J Dis Chest* 1976;70:73–7.
- Johnson IDA, Bland JM, Anderson HR. Ethnic variation in respiratory morbidity and lung function in children. *Thorax* 1987;42:542–8.
- Parajasinghan CD, Sittampalan C, Damani P, *et al*. Comparison of the prevalence of asthma among Asian and European children in Southampton. *Thorax* 1992;47:529–32.
- Jones COH, Quershi S, Rona RJ, *et al*. Exercise induced bronchoconstriction by ethnicity and presence of asthma in British nine year olds. *Thorax* 1996;51:1134–6.
- Ormerod JP, Myers P, Prescott RJ. Prevalence of asthma and 'probable' asthma in the Asian population in Blackburn, UK. *Respir Med* 1999;93:16–20.
- Duran Tauleria E, Rona RJ, Chinn S, *et al*. Influence of ethnic group on asthma treatment in children in 1990–1: a national cross sectional study. *BMJ* 1996;313:148–52.
- Ormerod LP. Adult Asian acute asthma admissions reassessed 1991–1992. *Respir Med* 1995;89:415–7.
- Gilthorpe MS, Lay-Yee R, Wilson RC, *et al*. Variations in hospitalisation rates for asthma among black and minority ethnic communities. *Respir Med* 1998;92:642–8.
- Sethi JP, Mathur DP, Baldwa VS, *et al*. Natural history of bronchial asthma in India. *J Asthma Res* 1969;6:187–97.
- Partridge MR, Gibson GJ, Pride NB. Asthma in Asian immigrants. *Clin Allergy* 1979;9:489–94.
- Carey OJ, Cookson JB, Britton J, Tattersfield AE. The effect of lifestyle on wheeze, atopy and bronchial hyperreactivity in Asian and white children. *Am J Respir Crit Care Med* 1996;154:537–40.
- Fuller RW, Dixon CMS, Barnes PJ. Bronchoconstriction response to inhaled capsaicin in humans. *J Appl Physiol* 1985;58:1080–4.
- Taylor RFH, Al Jarad N, John LME, *et al*. Betel nut chewing and asthma. *Lancet* 1992;339:1134–6.
- Stevens EA, Fletcher RF. Communicating with Asian patients. *BMJ* 1989;299:905–6.
- Hawthorne K. Accessibility and use of health care services in the British Asian community. *Family Pract* 1994;11:453–9.
- Moudgil H, Cunningham B, Honeybourne D. Primary care asthma: developments in the Birmingham (UK) consultation and the role of the practice nurse. *Eur Respir J* 1996;9:223–45.
- Putsch RW. Cross-cultural communication. The special case of interpreters in health care. *JAMA* 1985;254:3344–8.
- Lal A, Kumar L, Malhotra S. Knowledge of asthma among parents of asthmatic children. *Indian Pediatr* 1995;32:649–55.
- Moudgil H, Honeybourne D. Differences in asthma management between white European and Indian subcontinent ethnic groups living in socioeconomically deprived areas in the Birmingham (UK) consultation. *Thorax* 1998;53:490–4.
- Moudgil H, Marshall T, Honeybourne D. Asthma education and quality of life in the community: a randomised controlled study to evaluate the impact on white European and Indian subcontinent ethnic groups from socioeconomically deprived areas in Birmingham, UK. *Thorax* 2000;55:177–83.
- Gibson PG, Coughlan J, Wilson AJ, *et al*. *Self-management education and regular practitioner review for adults with asthma (Cochrane Review)*. In: The Cochrane Library, Issue 1. Oxford: Update Software, 1999.
- Williams MV, Baker DW, Honig EG, *et al*. Inadequate literacy is a barrier to asthma knowledge and self care. *Chest* 1998;114:1008–15.