This article reviews diabetes in Indo-Asian (IA) people (who came, or whose forefathers came, from the Indian subcontinent), and African-Caribbean (AC) people (who came, or whose forefathers came, from the Caribbean).

Demography

In the 1991 census nearly 840,000 people described themselves as Indian, 500,000 as Black Caribbean and 477,000 as Pakistani, and less than half were born abroad. Compared with their white peers:

- the IA and AC populations were younger
- they were less likely to be in employment – if they had work, it was less well paid and with more arduous physical conditions
- more were poor
- fewer owned their own homes
- they were less able to benefit from social security.

Epidemiology of diabetes

Comparison with whites

Type 1 diabetes was initially uncommon in IA migrants, but the prevalence is now the same as in whites. There are no reliable data for AC people. Type 2 diabetes is commoner in IA, and occurs at an earlier age, with a lifetime risk of approximately one in three. AC have intermediate rates (Table 1).

As in all societies, the prevalence of diabetes increases with age, sedentary lifestyle and increase in body weight. Importantly, the rates in the UK are not different from those recently reported from the Indian subcontinent and the Caribbean. No firm reason for the high rates of diabetes is yet available, but the thrifty gene or phenotype hypotheses are both potential explanations. Insulin resistance is marked in IA, which could explain the onset of diabetes at a young age. Insulin resistance also explains the rapid change from impaired glucose tolerance to overt diabetes and the rapid progression to insulin therapy in this population.

Other risk factors

Hypertension. Hypertension is common in AC and explains the high rate of stroke and renal disease. The rates of hypertension are low in vegetarian Gujeratis, but hypertension is common in Punjabi Sikhs.

Lipids. AC have lower total cholesterol and triglyceride, but higher high-density lipoprotein than whites or IA. This contributes to the lower rates of coronary heart disease (CHD) seen in AC.

Complications of diabetes

Comparisons here are made with whites as the reference population. Where possible, diabetes-specific prevalence or incidence data have been used.

Renal disease

Renal disease is commoner in IA and AC than in whites. In the former, there are increases in microalbuminuria.
proteinuria\textsuperscript{16}, creatinine (>200 μmol/l)\textsuperscript{17}, and end-stage renal failure (>500 μmol/l or on dialysis)\textsuperscript{18}. Once the process of renal damage has started, the rate of decline of renal function\textsuperscript{19} and mortality rates are the same as in whites (O Woghiren, ML Burden, AC Burden; personal observations).

Eye disease

Cataracts are commoner in IA\textsuperscript{20}, retinal vein occlusions are commoner in both IA and AC\textsuperscript{21}, while the prevalence of diabetic retinopathy is probably the same or less than in whites\textsuperscript{20}.

Vascular disease

Peripheral vascular disease is rare in IA\textsuperscript{22}, but as common in AC as in whites\textsuperscript{23}. In those with diabetes, the prevalence of CHD in IA and whites is identical, whereas the AC are relatively protected\textsuperscript{24}. Stroke is particularly common in AC\textsuperscript{24}.

Management of diabetes in ethnic minorities

Educational issues

In managing diabetes mellitus in ethnic groups, the educator has to be acutely aware of cultural differences and values, but must also avoid stereotyping. Individuals’ needs can be met only by an individual assessment, which is then communicated to the team. Community needs will be addressed only by cooperation with local community groups and leaders. Education of community and individuals involves several key workers, all of whom need to give the same message.

Educating the educators

All diabetes educators should receive education about cultural awareness. This should specifically include sessions on religion, hospitality, meals and food, and family life. Since diabetes runs in families, every effort should be made to include family members. Community workers and opinion leaders need to be taught about diabetes, where possible by means of mass communication.

Information

Patients should be provided with information in their preferred language to help them come to terms with their diagnosis and to encourage self management. Considerable care should be given to producing educational material, bearing in mind the following points:

- The medical content needs to be accurate
- The information should be in English, assuming a reading age of no more than grade 9
- If a translation is made, it should be independently back translated to ensure correct messages are given.

Written educational material is then available for those who prefer to read the educational message. This can be used as a script for audiotapes, video productions and other visual techniques.

Lifestyle

Prudent diets, increased exercise with smoking cessation programmes are effective primary and secondary interventions for CHD and diabetes\textsuperscript{25}. IA tend to be less active than whites\textsuperscript{26}, and culturally acceptable physical activity and exercise should be encouraged: ‘talk and walk’ rather than ‘sit and talk’ may be a useful example.

Compliance with dietary advice is difficult if important social rules such as hospitality are ignored, or if food advice does not include what is actually eaten. In this regard, IA or AC are no different from their white peers, but may be less able to explain to their healthcare worker how the advice is inappropriate\textsuperscript{27}.

The pharmacological management of diabetes

Glycaemic control

The principles of glycaemic control are the same as for the white population, remembering the progressive needs for treatment. Protocol-driven studies aiming to keep haemoglobin A\textsubscript{1c} normal show equal glycaemic control, but in everyday practice treatment is often inadequate when compared with whites\textsuperscript{28}.

Cardiovascular risk reduction

There is no specific evidence for aspirin or statin therapy in either IA or AC. Therefore, it seems cogent to use the joint British Societies’ guidelines for all patients\textsuperscript{29}.

Oral hypoglycaemic agents

There is no definitive evidence on the drug of choice for IA or AC because the population in the UK Prospective Diabetes Study (UKPDS) was mainly

Table 1. Community prevalence of diabetes following screening programme.

<table>
<thead>
<tr>
<th>Study (Ref)</th>
<th>Age (years)</th>
<th>Ethnic group</th>
<th>%</th>
<th>No.</th>
</tr>
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<tbody>
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<td>20–79</td>
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<td></td>
<td></td>
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<td>35–64</td>
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<td></td>
<td></td>
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<td>2,132</td>
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</table>
white, but it did reflect the UK diabetic population as a whole. In the absence of any other evidence, the overall UKPDS findings should be applied to IA and AC. Metformin may be particularly advantageous in the overweight IA patients to reduce their cardiovascular risk. In the future, the thiazolidinediones may prove to be beneficial in IA, in whom insulin resistance is considerable.

Insulin therapy

Cultural sensitivity is required when prescribing insulin. Pork insulin (including modified pork as in Human Velosulin™) would be unacceptable to Muslim, Jewish or vegetarian patients. IA require insulin at an earlier age, and need larger amounts, than whites.

Travelling abroad

IA and AC frequently report that their diabetes gets better when visiting warm countries. This is presumably because more exercise is undertaken. The time changes involved with travel can cause problems but, with encouragement, appropriate changes can be made to medication. All patients on insulin should be reminded to carry it in hand luggage, carry identification for customs, be aware of different insulin concentrations, and know how to keep insulin cool (in an unglazed pot containing water in a shady place or in a special insulin carrier).

Fasts

Special advice and support are required during periods of fasting. Fasting occurs in most religions but is of particular concern to a Muslim who will allow nothing, including water, to enter his body during the daylight hours during Ramadan. Islam does not require people who are ill to fast, but many devout diabetic Muslims still do fast. With care, negotiation and co-operation, fasting can be achieved safely. The principle is to negotiate safety:

- If you feel hypoglycaemic, will you break your fast?

**Key Points**

- 18–22% of Indo-Asian (IA) people aged 35–70 years have diabetes
- IA people have marked insulin resistance, accounting for diabetes at an early age and rapid transition to insulin replacement
- In African Caribbean people, hypertension is a common avoidable cause of stroke and renal disease
- All stages of diabetic nephropathy are commoner in IA people than in whites
- Educational literature needs care in production and objective assessment
- Ethnicity used as a variable in audit ensures equity
- Glycaemic and cardiovascular risk reduction programmes should be protocol driven to ensure equity
- Fasting can be achieved safely by negotiation and co-operation

- Are you prepared to try fasting before Ramadan so that you can modify your treatment?

  Our usual advice is to reduce daytime insulin amounts, and consider using quick-acting insulin analogues such as insulin Lispro, and possibly Aspart, with the meal at the end of the fast, modifying the dose as a result of self testing.

Herb treatment

Karela, methi, garlic and bitters are frequently taken for their hypoglycaemic action, either real or imaginary. The key point is to encourage empiricism and compliance: the herb should be taken regularly, and the patient encouraged to observe its effects on blood glucose measurements and themselves.

Some caution is needed here:

- Karela is associated with an increased frequency of abortions, so its use should be discouraged in pregnancy
- Some alternative medicines contain heavy metals and arsenic.

Screening programmes for diabetes

IA and AC are at high risk of diabetes. Opportunistic screening should be done on individuals over the age of 30 years every 2–3 years: for example, if admitted to hospital or seen in outpatients for an illness unrelated to diabetes.

Equality of care and access to health services

The NHS proclaims equality of access to care. This should not be assumed, but measured by audit. An audit of the care of IA patients with CHD in Leicester revealed that IA were admitted more slowly, and were less likely to be thrombolysed, referred for an exercise stress test or for coronary angiography than their white peers. Several factors contributed to this, including reluctance to seek medical attention (particularly to dial 999), language barriers, difficulties experienced by healthcare workers in interpreting symptoms, and unawareness of the availability of services. The audit showed us how to improve our care and the access to care, and the situation is now better.

Conclusion

The number of both IA and AC who will develop diabetes is considerable. Self management is a feasible technique to ensure adequate care. To achieve this, all healthcare workers have a responsibility to ensure appropriate and culturally sensitive education of the person with diabetes.
References