Management of diabetes in South Asian communities in the UK


Summary

This article discusses some of the specific challenges related to the management of diabetes in patients of South Asian origin. Communicating information that considers cultural, religious and language differences is important to promote effective self-management. The South Asian population in the UK is at greater risk of developing type 2 diabetes, and cultural practices such as fasting if not managed properly can lead to deterioration in their condition. The use of appropriate information and educators with Asian language skills and an understanding of the local population's culture are important to improve self-management of diabetes in these patients.

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Aims and intended learning outcomes

This article aims to increase awareness of diabetes management in patients of South Asian origin. After reading this article, you should be able to:

- Identify why there is an increased prevalence of diabetes in this population.
- Discuss the possible difficulties in managing diabetes in South Asian patients.
- Outline different approaches to diabetes management for South Asian and white British patients.
- Explain ways to deliver culturally sensitive and appropriate information to patients for whom English is a second language.

Introduction

Diabetes is a worldwide problem that currently affects 150 million people, and this number is set to double by 2025 (Amos et al 1997). The condition is disabling and extremely costly to patients and the NHS (Bottomley 2001). If it is not managed, complications such as renal failure, blindness, heart disease and the need for limb amputations can develop (Williams and Pickup 1999).

Diabetes is a complex condition requiring polypharmacy, regular review, behaviour modification and the development of self-management skills, particularly for patients with type 2 diabetes (Department of Health (DH) 2001). The management of diabetes is a challenge for most patients, but is even more so for South Asian patients, especially if English is not their first language.

Although people of South Asian origin contribute to only 3 per cent of the United Kingdom (UK) population (Peach 1996), they form a higher proportion of the diabetic population. The incidence of type 2 diabetes is six times higher in South Asian people than in the white British population (DH 2001). Diabetes occurs at an earlier age and complications resulting from the condition are more likely in this population, for example, coronary heart disease (DH 2001).

South Asian patients require particular support and management, given the high risk of developing diabetes and associated
glucose tolerance or type 2 diabetes. These insulin resistance, which can include impaired (Table 1). Metabolic syndrome incorporates obesity and clotting abnormalities include hypertension, dyslipidaemia, central reffered to as the ‘metabolic syndrome’, which involves the administration of oral glucose regulators, for example, repaglinide and nateglinide. If the condition progresses to beta function, such as sulphonylureas, and prandial glucose regulators, for example, repaglinide and nateglinide. If the condition progresses to beta cell failure, insulin addition therapy is used (Williams and Pickup 1999, National Institute for Clinical Excellence 2002).

Type 2 diabetes is a cluster of conditions referred to as the ‘metabolic syndrome’, which include hypertension, dyslipidaemia, central obesity and clotting abnormalities (International Diabetes Federation 2005) (Table 1). Metabolic syndrome incorporates insulin resistance, which can include impaired glucose tolerance or type 2 diabetes. These
Measuring the patient’s waist circumference is the recommended standard procedure for determining obesity rather than body mass index (National Obesity Forum 2004). Waist circumference is the horizontal circumference midway between the lower rib margin and the upper hip margin. The measurement should be taken using a good-quality tape measure when the patient is relaxed, following exhalation (Steel et al 2005).

**Prevalence according to population**

Diabetes is more common in South Asian than white British populations. There is a high prevalence of type 2 diabetes in the South Asian population in the UK, as 20 per cent of people over the age of 40 have this condition (Barnett 1999). In one study, 15.2 per cent of the Asian population had diabetes compared with 3.8 per cent of the white population (Burden 2001).

Insulin resistance is the precursor of type 2 diabetes, and people of South Asian origin are more likely to be insulin-resistant than white British people because of a genetic predisposition that shows up in certain environments, that is, western society (McKeigue et al 1991). This increased risk has also been demonstrated in children (Whincup et al 2002). The UKPDS (1994) found that the prevalence of diabetes was four times higher in South Asian people, and that diabetes onset occurred a decade earlier in the South Asian population. Earlier onset of type 2 diabetes is of particular concern for women, as pregnancy in women with diabetes has a poorer outcome than those without the condition (Dunne et al 2003).

Therefore, pre-conception counselling is essential for women with diabetes who intend to have children.

**Complications**

Patients of South Asian origin have a high risk of developing diabetic complications, especially cardiovascular and renal damage. Mortality rates are 40 per cent higher than those for the white population (Balarajan 1996, Raleigh et al 1997, Wild and McKeigue 1997). The increased risk of renal disease combined with earlier development of diabetes has serious cost consequences for end stage renal failure treatments in the NHS in the future (Gujral et al 1997). Diagnosis of earlier onset diabetes in South Asian patients is associated with increased likelihood of premature death, especially in females (Swerdlow et al 2004).

Increased risk can be attributed to central obesity, low cardiovascular-protective high-density lipoprotein cholesterol, abnormal triglycerides, fibrinolytic factors and general lack of exercise. These factors combine to cause atherogenesis, that is, the formation of lipid deposits in the arteries (Kain et al 2003).

The weight classification for South Asian people differs from that for white people due to the higher risk of developing type 2 diabetes and cardiovascular disease. In the white British population, a body mass index (BMI) of 25kg/m² or more is considered overweight (National Obesity Forum 2004), but this is lowered to 23kg/m² for South Asian people (Tan et al 2004).

Additional factors can compound the increased morbidity and mortality in people of South Asian origin. For example, there is evidence that South Asian patients present later for thrombolysis following an MI than white Europeans. They are also less likely to be referred for exercise-stress testing, have longer waits for angiography (Mather et al 1998, Lawrence and McNally 2001) and may be less likely to receive lipid-lowering treatment because, for example, their total cholesterol levels were lower than white Europeans (Martin and Jones 2000). Despite the increased risk of developing diabetic complications, some South Asian patients are more likely to miss clinic appointments (Hawthorne 1994). The reasons for this are often multifactorial and patients require a sensitive approach.

**Table 1**

<table>
<thead>
<tr>
<th>The metabolic syndrome and type 2 diabetes</th>
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<tr>
<td><strong>Risk factor</strong></td>
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<tr>
<td>Central obesity (waist circumference)</td>
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<tr>
<td><strong>Europids (people of European descent):</strong></td>
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<tr>
<td>Men</td>
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<tr>
<td>Women</td>
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<tr>
<td><strong>South Asians:</strong></td>
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<td>Men</td>
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<tr>
<td>Women</td>
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<tr>
<td>Raised triglycerides</td>
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<td>Reduced high-density lipoprotein cholesterol</td>
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<td>Men</td>
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<tr>
<td>Women</td>
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<tr>
<td>Raised blood pressure</td>
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<tr>
<td>Raised fasting plasma glucose*</td>
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</tbody>
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* The International Diabetes Federation (2005) suggests 5.6mmol/L for fasting blood glucose, but currently in the UK the World Health Organization criteria of 6.1 or higher is used (WHO 1999).
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Time out 2

Case study Farida, aged 52 years, has recently moved to the area, and has been given a patient check by the practice nurse at her new health centre. She has a blood pressure of 152/94mmHg, total cholesterol of 5.6mmol/l, a high-density lipoprotein cholesterol of 0.8mmol/l and random blood glucose of 13.6mmol/l. One week later, her fasting blood glucose is 7.2mmol/l. She is overweight, and does not speak English. What is the likely diagnosis? Suggest some initial treatment approaches. What concerns is Farida likely to have?

In the case study above, the raised total cholesterol, low high-density lipoprotein, hypertension, and abnormal blood glucose results are all features of type 2 diabetes. Interventions to reduce insulin resistance through lifestyle changes should be recommended, especially weight management and increasing physical activity.

Farida may have family members who have diabetes with complications, which may frighten her. Advice on healthy eating may make her feel that she cannot eat with her family or be included in social events. Participating in exercise in a culturally safe and appropriate environment may be an issue. She may miss out on lifestyle advice and information if there is no one who speaks her language in the diabetes team caring for her.

Lifestyle

A healthy lifestyle forms the foundation of a management plan for anyone with diabetes. A healthy, regular eating pattern, regular physical activity, the cessation of health-damaging behaviours, such as smoking, and an annual review of diabetes control are recommended for all patients with diabetes.

The importance of dietary management to minimise obesity and cardiovascular risk in South Asian patients is no different from that of white patients (Connor et al 2003). However, it is important to ensure that advice and information are culturally sensitive and to recognise the importance of food in the social context (Ikeda 2004). Traditional South Asian diets are often characterised by high-fat and sugar content, including the use of ghee (clarified butter), which is more likely to be atherogenic than standard butter as it contains oxidised lipids. Brown sugar (ghor) is often incorrectly understood to be a healthy sugar. Traditional Indian sweets (jalebis and ladhus) comprise one third fat and one third sugar. High-fat fried snacks like pakora, samosas and Bombay mix are also popular (Govindji et al 2002). Alcohol intake is generally lower in South Asian populations than in the white British population, except in some Sikhs for whom heavy spirit drinking may be a problem (there is a higher rate of alcohol-related psychiatric admissions for Sikh men) (Goenka et al 2002).

Food is an important part of social life, and the associated cultural significance of food for South Asian people can make dietary changes difficult to sustain. Patients may only tell close relatives that they have diabetes and may be reluctant to refuse inappropriate foods at other people’s homes. Traditional foods are part of the South Asian identity, so a ‘diabetes diet’ may mean isolation from the social group, particularly in older South Asian patients. This is likely to become less of an issue with subsequent generations born in the UK and assimilating the values of UK society (Duthie-Nurse 1998).

Other aspects of following a healthy lifestyle may be difficult for South Asian patients. They may have poorer health generally (Chandola 2001), and may be more likely to live in a socially deprived area with high Townsend scores, an assessment tool for measuring levels of material deprivation (Simmons et al 1989). South Asian men are more likely to smoke than white men, especially Bangladeshi men, 50 per cent of whom smoke (British Heart Foundation (BHF) 2001). South Asians living in the UK are less likely to eat fruit and vegetables than other ethnic groups, and are less likely to participate in exercise (BHF 2001).

South Asian women tend to have low smoking rates compared with white British women (BHF 2001). However, exercise classes may be difficult for some South Asian women to attend unless single-sex facilities are available, as certain religions require that women keep their bodies covered. Sporting activities are not likely to be delivered in languages other than English which also limits exercise participation in this group.

Time out 3

How healthy is your lifestyle? Keep a dairy for a week and observe how many portions of fruit and vegetables you eat, and how many minutes of exercise you do each day. If you are a smoker, count how many cigarettes you smoke. Patients with diabetes are advised to make lifestyle improvements as part of their management plan. Being aware of areas that need improving in your own lifestyle may help you to understand how difficult it can be for patients to make these changes.

Cultural and religious influences

Fasting Advising patients of South Asian origin on how to fast safely is a challenging aspect of
diabetes management. This is a particular issue for Muslim patients who observe Ramadan, which involves fasting from sunrise to sunset during the ninth month of the Islamic year. This is part of the adult Muslim way of life, and forms one of the five pillars of Islam (Sheikh and Gatrad 2000). As the Islamic year is about 11 days shorter than the 365 day year, Ramadan gradually moves through the seasons. This means that in the UK a winter fast can last approximately ten hours but it can be up to about 19 hours in the summer.

Patients who use insulin are of particular concern to health professionals, especially those with type 1 diabetes, as they are at risk of hypoglycaemia if they continue their normal insulin dose while fasting. They are also at risk of hyperglycaemia, and possibly diabetic ketoacidosis, if they do not receive insulin.

Fasting is obligatory for all healthy Muslim adults. Those who are exempt include children who have not reached puberty, menstruating women (although the days missed are made up later), older people, pregnant women and those with chronic illness. Although patients with diabetes fall into the latter category, many will still want to fast. Healthcare professionals may have little knowledge about Ramadan, and because of this advise patients not to fast. This results in patients disregarding the advice, which may cause problems with glycaemic control (Barrow 2004). Many patients can fast safely with adequate education and support, and a flexible insulin regimen.

However, there are some patients who should be advised not to fast, including those with type 1 diabetes that is unstable or difficult to regulate (often referred to as ‘brittle diabetes’), poor glycaemic control or renal impairment. These patients can replace their fast by providing food for one person for each day of the fasting period (known as ‘fidya’); the provision of food is usually substituted by a sum of money that is sent to charity. Glycaemic control during fasting is often difficult to achieve. Fasting for relatively long periods, for example, during daylight hours, increases the risk of hypoglycaemia for those on sulphonylureas and insulin. During Ramadan the fast is broken at sunset with large meals, often high in fats and sugars, including fizzy drinks and fruit juices, which can lead to hyperglycaemia. Patients need to be advised how to choose healthier options, such as diet drinks, which allow them to participate in the social occasion. Patients require advice on timing and adjustment of insulin or oral medication doses to prevent hypoglycaemia. It is essential that patients with type 1 diabetes continue with insulin, otherwise they may develop diabetic ketoacidosis, which can occur in the absence of insulin even without food intake.

As patients do not take anything orally during the fasting hours, it is important that they are advised to break their fast if they become hypoglycaemic, and they should carry glucose and identification with them at all times. Muslims will often not take tablets or inject insulin during daylight hours, and some may not perform blood glucose tests or insert eye drops because of mistaken interpretation of religious instruction. Poor attendance at clinics during Ramadan is common, as people tend to rest during the day. They are often up early to have a pre-fasting meal before sunrise, so they are tired and sleep late (Shaikh et al 2001).

Hinduism also observes fasting, and is characterised by many festivals, with periods of fasting and feasting lasting from one to nine days, including Diwali (festival of lights which is celebrated by feasting), Navrati (celebrating the death of the demon Ravana by Rama, marked by fasting and dancing which results in increased risk of hypoglycaemia in those treated with insulin or sulphonylureas), and Holi (festival of colours, involving a single day of fasting). Erratic eating patterns may result in swinging blood glucose levels (Patel et al 2001). It is advisable to discuss with patients whether their religion includes periods of fasting and feasting so that they can be advised appropriately, for example, fasting is not observed by Sikhs.

Hajj Adult Muslims are obliged to make a pilgrimage to the sacred mosque in Mecca at least once in their lifetime, known as hajj. This event can have significant and potentially devastating consequences for patients with diabetes, and adequate preparation and support are crucial for those who want to undertake this journey. Hajj is physically demanding and involves walking for distances in the heat and strong sun, and standing in the desert of Arafah. This is done in the belief that hajj is a rehearsal for a judgement day when they will stand before Allah. Wearing good quality footwear when walking in the desert is essential, especially for those patients who have diabetic neuropathy. The reduced sensation in the feet caused by damage to nerves in this condition, coupled with peripheral vascular disease, makes these patients vulnerable to diabetic foot ulcers. Patients need to avoid dehydration by drinking plenty of fluids and they should use a high factor sun protection cream while in the desert. If patients use insulin, they will need advice on how to keep it cool when travelling in Saudi Arabia: small cool bags can be purchased for this purpose. They should also be advised to keep insulin in their hand luggage when travelling by air to avoid it freezing in the hold of the plane. Sufficient supplies of medication and blood testing strips are also required.

Patients should be advised to have adequate health insurance, which includes pre-existing conditions.
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Conditions like diabetes. Following a meningitis outbreak among pilgrims several years ago, vaccination for meningitis has been a prerequisite for anyone attending hajj. Patients will need a certificate to prove they have been vaccinated. Nurses may play a role in the provision of these certificates, for example, providing advice to patients and getting the certificates signed by GPs. Hepatitis B is a potential risk as many pilgrims have their heads shaved during the pilgrimage by barbers using communal razors (Sheikh and Gatrad 2000).

Time out 4

Abid controls his type 2 diabetes with metformin 500mg three times a day. He tells you that he plans to fast during the holy month of Ramadan. What advice should you give him? Does he need to worry about hypoglycaemia?

Alternative medications

Herbs and herbal medicines are popular in South Asian communities. An example of a herb commonly used in the treatment of diabetes is karela (Momordica charantia) which has proven hypoglycaemic properties. It works by reducing hepatic gluconeogenesis (glucose production by the liver) and by decreasing intestinal glucose absorption (Day 1995).

Patients sometimes buy pills when in India and Pakistan that appear to improve glycaemic control and which may allow the successful cessation of conventional oral hypoglycaemic agents. However, when these pills are analysed, the active ingredient is likely to be a sulphonylurea. Wood et al (2004) described a patient who improved his diabetes control so successfully with herbal pills from India that he had been able to stop his insulin therapy. The pills were found to contain chlorpropamide, which is an older class of sulphonylurea. This form of the drug is less likely to be prescribed now as it has a long half-life with increased risk of hypoglycaemia in older patients or those with renal impairment (Wood et al 2004). Therefore, patients need to be advised that herbal preparations can contain active ingredients that may be potentially dangerous.

Language and communication

By the early 1990s there were more than two million people living in the UK who spoke little or no English, most of whom were South Asian (Mello 1992). The number of people with English as their second language is likely to be higher now, with a wider variety of languages. Successful management of diabetes requires patients to understand the nature of their condition and to develop self-management skills. This is difficult to achieve when patients do not speak English.

Recent guidelines from the National Institute for Health and Clinical Excellence recommend

References

that all patients with diabetes should have the opportunity to attend a structured education programme for the successful management of diabetes (DH 2005). A report on diabetes services in the late 1990s by the Audit Commission (2000) showed that patient education is patchy in many areas of primary, secondary and tertiary care. Ethnic minorities were found to be twice as likely as the white British population to report gaps in understanding their condition.

Asian women tend to receive less education than Asian men about diabetes and are less likely to have a full understanding of their condition (Hawthorne 1990). As women are the main carers of older people and children and usually prepare and serve food for the family, this lack of education may have an impact on the diabetes management of other family members. There is evidence that some South Asian people may find it more difficult to access healthcare services generally (Raleigh and Clifford 2002).

Access to education for South Asian patients does not necessarily mean that it will be effective (Greenhalgh et al 1998, Vyas et al 2003). In the author’s experience, some patients who do not speak English may have poor literacy skills in their own language. The provision of leaflets written in Asian languages is important, but in some cases they may be of limited value, and videos and audio tapes may be more appropriate.

The use of group work with leaders who are fluent in the appropriate language can be effective, and an understanding of the cultural norms and health beliefs of patients is important for effective communication.

Time out 5

Look out for some health information leaflets written in different languages. Are they attractive and do they include pictures or diagrams? List ways in which these leaflets could be improved.

Initiatives to improve diabetes care for South Asian patients

Awareness of diabetes management for the South Asian population in the UK is increasing, particularly for those who do not speak English. Initiatives range from small local programmes in areas with large Asian populations, to nationally available resources and research. Local diabetes awareness days and events, including healthy cooking displays and educational plays, provide information for people who would otherwise find it difficult to access support (Coughlan 2003). Diabetes UK is a national charity for people with diabetes, and provides a range of materials in different languages (Diabetes UK 2000).

Diabetes specialists nurses who speak Asian languages in the West Midlands formed the Focus Group for Asians with Diabetes in 1998. They assessed the available educational material for patients and found that in many cases printed information was not culturally appropriate and was often photocopied and unattractive or not
available. The aims of the group are to provide a consultative service to other nurses on the management of South Asian people with diabetes, and to work with the pharmaceutical industry and Diabetes UK to produce leaflets and videos for patients of Asian origin (visit www.diabetes.org.uk). *Dispelling the Myths of Diabetes within the Asian Community* was printed in Punjabi and *Understanding and Managing Diabetes within the Asian Community* is available in five Asian languages (Marwa et al 2004).

In Birmingham and Coventry a formal investigation is being conducted into the use of step-by-step guidelines of adding in and adjusting medications, practice nurse-led protocols for diabetes management, and education delivered by link workers and diabetes specialist nurses who speak Asian languages. This on-going study called the UK Asian Diabetes Study aims to achieve targets in lipid, glucose and blood pressure control in primary care settings. Three hundred and twenty-five high-risk patients who were followed up in the first year showed significant reductions in cholesterol and blood pressure, although no difference was found in glycaemic control (O’Hare et al 2004). This study indicates that the use of interpreters, link workers, advocates and educators with Asian language skills and an understanding of the local population’s culture can lead to improvements in the self-management of diabetes.

**Conclusion**

People of South Asian origin have a higher risk of developing type 2 diabetes than the white population in the UK. They tend to develop diabetes at a younger age, and are more likely to experience cardiovascular and renal complications than white people. Patients who do not speak English may find it difficult to access adequate health care, information and support which will increase the risk of developing diabetic complications.

Some aspects of traditional Asian culture can present particular challenges in diabetes management. Many healthcare professionals advising patients of South Asian origin are often not aware of relevant aspects of associated cultures, and therefore may not be able to offer appropriate information. The use of healthcare workers who speak Asian languages and understand associated cultural norms is useful. The availability of literature, videos and well-presented information contribute to improving diabetes management for this patient group.

**References continued**

**Populations of Great Britain: The Stationery Office, London.**


