

Care for People with Diabetes during The Moslem Pilgrimage (Haj) An Overview

Beshyah SA¹ and Sherif IH²

¹ Center for Diabetes and Endocrinology at Sheikh Khalifa Medical City, Abu Dhabi, United Arab Emirates

² Faculty of Medicine, Al Fateh University, Tripoli, Libya

Abstract

Haj is one of the five cardinal components of Islam commonly known as the five pillars of Islam. Approximately two million Muslims perform it each year. Haj involves travel to the holy sites in and around Mecca and Medina during a specified short period of time in a limited space, not usually inhabited by such a large number of people. This article deals with the effects of this event on diabetes and its management. The importance of this arises from the fact during Haj, the person's life routine changes as he travels to a different place of his own for a period of 4–6 weeks where geography, weather, diet, and habits are different. During Haj most people live what is effectively a very basic life in very crowded places. Therefore, medical conditions, such as diabetes, whose management depends on a stable routine, would predictably be affected significantly. People with diabetes should have enough time to consider a management plan for their diabetes. The objectives are to achieve a good control and avoid any complications that may be particularly associated with the conditions faced during Haj.

Key words: Diabetes, Haj, Moslems, Ethnic, Hyperglycaemia, Hypoglycaemia.

Introduction

SeHaj is one of the five cardinal components of Islam commonly known as the five pillars of Islam. Approximately two million Muslims perform it each year. Haj involves travel to the holy sites in and around Mecca and Medina during a specified short period of time in a limited space, not usually inhabited by such a large number of people. This article deals with the effects of this event on diabetes and its management. The importance of this arises from the fact during Haj, the person's life routine changes as he travels to a different place of his own for a period of 4–6 weeks where geography, weather, diet, and habits are different. During Haj most people live what is effectively a very basic life in very crowded places. Therefore, medical conditions, such as diabetes, whose management depends on a stable routine, would predictably be affected significantly.

People with diabetes should have enough time to consider a management plan for their diabetes. The objectives are to achieve a good control and avoid any complications that may be particularly associated with the conditions faced during Haj.

Health hazards during Haj in general

Health problems and risk factors for all people during Haj are essentially the results of gathering of a large number of people during a short time in a limited space [1]. The pattern of medical conditions necessitating admission differs according to the weather conditions in that particular year [2-5]. The Haj also involves outdoor activities in hard weather conditions and camping. Accidents and fire risk are increased and may cause loss of life and property [6-7].

The Haj duties can be demanding in terms of physical activities and mental effort. A significant proportion of those performing Haj are elderly and may suffer from chronic medical conditions, which may be aggravated during Haj [2-6]. Hospital admission during Haj is related to old age and occurs in patients with associated co-

morbid conditions. During mild weather lower respiratory tract infections and exacerbation of bronchial asthma and COPD are the most commonly encountered diseases. Heatstroke and renal failure during the summer are the main reasons for admissions [3-7]. Conditions imported by those performing Haj, such as malaria and meningitis, contribute significantly to admissions. More recent series show increased contributions from non-communicable disease such as diabetes and cardiovascular disease [3-5].

People performing Haj may be pre-occupied by the religious rituals and self-management may be neglected. This may be complicated by language barrier making it difficult to access medical services.

Diabetes and Haj

Diabetes has been reported as a rising leading cause for morbidity and mortality during Haj [9-10]. In the year 2005, diabetes rates of 19% for the study sample. The rates were 43% specifically for nationals of the Arabian Gulf countries and 5% in those coming from African countries. Specific risk factors for poor diabetes control during Haj include travel to an unaccustomed environment, changes in the weather, frequent short-term movement between Mecca and surrounding places, intercurrent illnesses, particularly respiratory infection, heat strokes, and diarrhoea with dehydration and electrolyte imbalance. In addition, there may be lack of adequate supply of medication and/or monitoring instruments and limited access to specialist medical care facilities. Medical staff are predictably unfamiliar with the persons own care may be contribute to problems with diabetes control. The loss of normal routine of balanced diet to match a strenuous exercise may result in hypoglycaemia. Intercurrent illness and lack of adequate insulin/oral hypoglycaemic agents predictably precipitate hyperglycaemic complications.

A unique study of the profile and healthcare needs of 169 diabetic Omani pilgrims to Mecca [11]. The study's results may readily be generalized. Data were collected at a special diabetes clinic established in the camping site

where all Omani pilgrims convened for 3 days in 1996. Eighty six per cent of the patients were on oral anti-hypoglycaemic agents [OHA]. All of those with type 1 diabetes and 96% of type 2 diabetic individuals on OHAs brought their medicines with them. During the Haj period, 2.4% of diabetic patients had a random plasma glucose <4.0 mmol/L, 14% had RPG 4.0–6.0 mmol/L, and 49% were >10.5 mmol/L. About half of them knew the clinical presentation of hyperglycaemia, a quarter knew symptoms of hypoglycaemia but only 9.5% were trained to test their blood sugar. The median age was 54 years [inter-quartile range 50–62y], and 28% had coronary heart disease, hypertension or both. Movements between Holy places amounting to 5–15 km long were made on foot in 40%, by car or bus 31%, or a combination of both 29%. However, all except one were not wearing protective shoes and 70% did not have identification wristbands that showed their diabetic status and treatment regimens. Four per cent suffered from heat exhaustion, 3% had wounds, 1.2% pneumonia, and 2% cent went into coma.

In a second study, 34 diabetes mellitus was present in 15% of a total of 160 patients acutely admitted to hospital. Whereas in a more recent study, 31.9% of a total of 689 patients admitted as an emergency had diabetes (3.6).

Specific clinical diabetic problems during Haj

Hyperglycemic emergencies in Haj

In a prospective study of all diabetic ketoacidosis admitted to a single hospital in Medinah, 18 episodes were examined [12]. All but one was during Haj. Poor concordance with treatment was the precipitating factor (94%). Classical osmotic symptoms were present in the majority (94%) and symptoms of ketosis (nausea and vomiting) were present in one-third. Biochemical disturbances were severe, as indicated by the mean admission blood glucose (33.3 mmol/L); arterial blood pH (7.10); bicarbonate 5.7 mmol/L, and osmolality (315 mOsmol/kg). One patient died (mortality rate 5.6%). Respiratory infections are known precipitating factors for hyperglycaemic crises. Hence diabetic patients are annually vaccinated against influenza. Balkhy et al. [13] found that only 4.7% pilgrims admitted to hospital had received the influenza vaccine. They suggested that it should be a priority for those attending the Haj. We concur with this view in general and specifically for people with diabetes. This has been asserted in the official Saudi Health Check directives for 2007.

In an official Saudi report, diabetes was the cause of death in 2% of total mortality in the pilgrims in 1 year but only half of the deaths happened in hospital. Therefore more diabetes-related mortality is likely.

Hypoglycaemia during Haj

During Haj, a higher risk of hypoglycaemia is predictable, mainly due to the unusually excessive physical activities being undertaken, smaller meals, changes in the usual food intake, and different timing of meals from normal. Preference for performing prayers in the holy shrines (which may be a few miles away from their residence) may delay meal times. Excessive heat during

summer seasons may enhance insulin absorption to produce hypoglycaemia although it may conversely interfere with insulin storage and cause hyperglycaemia. Khan et al [14] reported their anecdotal impression from working in emergency services in Saudi Arabia. They felt that hypoglycaemic episodes were common during Haj. They suggested that differences in insulin preparations between Saudi Arabia (100 U/ml) and some other countries (e.g. 40 U/ml) were responsible for some cases of accidental insulin overdose. They also felt that use of high doses of soluble insulin twice daily with no intermediate insulin could precipitate hypoglycaemia readily by exercise or a delayed meal. In addition, some diabetic patients had hypoglycaemic episodes with no apparent cause. It is generally believed, however, that insulin doses, which may be optimal during a sedentary life, prove excessive during Haj, due to the moderate to severe exertion required.

Foot problems and macrovascular disease during Haj

Al-Qattan [15] reported 12 cases of foot burn sustained from standing or walking barefoot on the street following the 'Friday prayers'. All injuries occurred during the summer months when the ground temperature is estimated to be in the range of 50–60 °C. Eight out of the 10 adults were diabetic with significant peripheral neuropathy. Non-diabetic patients with intact sensibility of the feet developed second-degree burns that mainly involved the anterior part of the soles. On the other hand, diabetics with neuropathy developed deep burns that involved the entire weight-bearing area of the sole. Furthermore, in one diabetic patient with superimposed significant peripheral vascular disease this burn injury induced toe pulp necrosis. Al-Salamah [9] found that acute appendicitis and diabetic foot were the most common two causes of admission to general surgical admissions out of 177 patients (129M and 38F) with a mean age of 52.7 years in 2 major hospitals in the Holy Shrine over 2 consecutive years.

Skin infections [both fungal and bacterial] are recognized complications of diabetes particularly in patients with poorly controlled diabetes and poor hygiene. In 3 reports on skin infections during haj season, diabetes did not feature very highly [16-18].

Those who intend to perform Haj during summer are likely to suffer such problems unless they are warned and educated. Two groups in London [19] and Birmingham, UK, reported good results from this formal education course for those who declare intentions to perform Haj. However, patients with co-existing co-morbidity need full assessment for these conditions as some may affect diabetic control. Reduction in cardiovascular mortality has been reported by formal assessment and management before Haj [20].

Practical management of people with diabetes intending to perform Haj

Diabetic people who are intending to perform Haj are covered by the same practical recommendations issued to all those with chronic medical conditions. Considerations have to be given to the fact that Haj is a very stressful

endeavour and a worship that requires strenuous physical effort, especially for the diabetic, the elderly, and persons with other chronic illnesses. A pre-travel consultation and medical examination is mandatory. Assessment of the pre-travel blood glucose profile with special emphasis on blood glucose dips and peaks in relation to the medication. It may be necessary to advise the well-controlled diabetic patient to slightly reduce his morning dose of oral hypoglycemic agent or insulin as he/she is likely to be exercising the equivalent of 2 hours or more, which is contrary to most peoples' routine. Insistence on taking mid-morning snacks is also important when exercise is expected to be more strenuous, as during the days of travel between Mecca–Medina–Mount Arafat.

The diabetic emergency kit must contain a small jar of honey with instructions to rub on the gums in case he/she is found unconscious. It must also contain glucagon for ready use in insulin treated patients. The diabetic hypertensive patient must endeavour to control his blood pressure before travel and an attempt should be made to take into account the control during exercise. They should also be advised to either self-monitor or go to the country health mission and check their blood pressure regularly and adjust the antihypertensive dose accordingly.

Patients with nephropathy must make effort to avoid dehydration and carry water bottles with them and as they should drink two or more liters daily, depending on the weather. In case of diarrhea or vomiting the patient should not wait in their residence, but must present themselves to a health facility where dehydration can be corrected promptly, thus avoiding any deterioration or renal function. They must not self-prescribe as some medication might affect renal function adversely. Diabetic patients should avoid walking bare foot at all times. They can get a waiver to do some parts of Haj wearing protective shoes. As discussed above, even the non-neuropathic, non-ischemic foot injury is fraught with danger in that setting.

Many diabetic patients will have asymptomatic coronary artery disease so it is advisable to do an ECG in the pre-travel consultation with clear instructions to present themselves to a health facility as soon as possible if chest pain, shortness of breath or palpitations arise. In addition, all diabetic persons travelling for Haj should specifically learn about symptoms and signs of hypoglycaemia and how it should be treated. They should visit their physician to make sure that their diabetes is well controlled. Prior to travelling, patients should be advised to secure enough of their medication, needles, pens, and monitoring instruments; bring the necessary medication in proper containers; prepare protective shoes; and wear identifying wristbands. They should also carry a brief medical record and a signed statement from their doctor indicating their treatment. Patients and their companions also need to be educated in the recognition and prompt management of any diabetes problems. Several diabetes units in the UK are now holding pre-Haj education seminars (19-20). There are also a few reliable web sites for health advice in general and for diabetes in particular in both Arabic and English.

Final remarks

Keeping well during Haj is a real challenge for patients with diabetes and for their attendants (or companions). However, with caution, interest and pro-active planning, this may prove to be excellent opportunity for reviewing management and enhancing diabetic education to reduce diabetes-related short and long term problems. This season also provides an opportunity for the medical profession to learn and test their ability to tailor therapeutic regimens to patients' culture circumstances and individual needs.

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