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and Clinical Practicejournal homepage: www.elsevier.com/locate/diabresInternational
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Invited review

Diabetes and Ramadan: Practical guidelines



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ARTICLE INFO

Article history:

Received 1 March 2017

Accepted 6 March 2017

Available online 12 March 2017

Keywords:

Diabetes

Dosing

Fasting

Guidelines

Ramadan

ABSTRACT

Ramadan fasting is one of the five pillars of Islam and is compulsory for all healthy Muslims from puberty onwards. Exemptions exist for people with serious medical conditions, including many with diabetes, but a large number will participate, often against medical advice. Ensuring the optimal care of these patients during Ramadan is crucial. The International Diabetes Federation (IDF) and Diabetes and Ramadan (DAR) International Alliance have come together to deliver comprehensive guidelines on this subject. The key areas covered include epidemiology, the physiology of fasting, risk stratification, nutrition advice and medication adjustment. The *IDF-DAR Practical Guidelines* should enhance knowledge surrounding the issue of diabetes and Ramadan fasting, thereby empowering healthcare professionals to give the most up-to-date advice and the best possible support to their patients during Ramadan.

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E-mail address: mhassanein148@hotmail.com (M. Hassanein).<http://dx.doi.org/10.1016/j.diabres.2017.03.003>

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1. Introduction

Fasting during Ramadan is one of the five pillars of Islam and is obligatory for all healthy adult Muslims. Within the Muslim community, there is an intense desire to participate in fasting, even among those who are eligible for exemption. The timing of Ramadan is based on the lunar calendar (355 days per year), which means that the start of Ramadan varies from year to year. In some parts of the world, daylight can last up to 20 h in the peak of summer. Climate conditions also vary according to the date of Ramadan, with people fasting in very dry and hot weather some years.

Some regions with a high Muslim population, including the Middle East, Africa and South East Asia, are expected to see the number of patients with diabetes more than double in the next 25 years [1]. The Epidemiology of Diabetes and Ramadan (EPIDIAR) study performed in 2001 found that 42.8% and 78.7% of patients with Type 1 or Type 2 diabetes mellitus (T1DM/T2DM), respectively, fasted for at least 15 days during Ramadan [2]. More recently, the CREED study reported that 94.2% of T2DM patients fasted for at least 15 days and 63.6% fasted every day [3].

For fasting Muslims, the onset of Ramadan heralds a sudden shift in meal times and sleep patterns. This has important implications for physiology, with ensuing changes in the rhythm and magnitude of fluctuations in several homeostatic and endocrine processes. Sleeping patterns are often

altered during Ramadan and several circadian rhythm changes have been noted, including changes in body temperature and cortisol levels [4–7]. When fasting, insulin resistance/deficiency can lead to excessive glycogen breakdown and increased gluconeogenesis in patients with diabetes, as well as ketogenesis in patients with T1DM. As a result, the risks facing patients with diabetes, including hypoglycaemia, hyperglycaemia, diabetic ketoacidosis, dehydration and thrombosis, are heightened during Ramadan [8].

Ramadan fasting, therefore, represents a challenge to both patients and healthcare professionals (HCPs). Existing recommendations on the management of people with diabetes who fast during Ramadan are mostly based on expert opinion rather than evidence gained from clinical studies. With so many Muslims with diabetes choosing to fast and with the numbers predicted to rise sharply over the coming years, there is an immediate requirement for evidence-based practical management guidelines. The International Diabetes Federation (IDF) and the Diabetes and Ramadan (DAR) International Alliance have come together to deliver comprehensive guidance on this subject. The *IDF-DAR Practical Guidelines* provide HCPs with relevant background information and practical recommendations, allowing them to deliver the best possible care and support to patients with diabetes during Ramadan, while minimising the risk of complications.

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