

Highlights of the Ninth Diabetes and Ramadan International Alliance Conference (Mena-zone Virtual), January 21–22, 2021

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Abstract

The 9th “Ramadan and Diabetes” international alliance annual conference was held over 2 days (January 21–22, 2021) virtually due to health restrictions imposed by the COVID-19 pandemic. The program included several sessions covering various aspects of Ramadan fasting from physiology, nutrition, pharmacotherapies, mental well-being, and bioethical considerations. A good proportion of the conference was used to highlight the 2021 edition of the International Diabetes Federation-diabetes and Ramadan (DaR) recommendations on diabetes management during Ramadan. The proposed new risk stratification tool for objectively assessing patient’s risk was discussed. Results of the DAR global survey of the impact of COVID-19 on fasting practices were reported during the event. Results of a couple of recent trials were presented during the conference. The conference closed by a thoughtful review of the grading of evidence and a futuristic vision of future research directions. The present report provides a concise overview of the conference to help those who did not have the opportunity to attend the live event.

Keywords: COVID-19, diabetes, hyperglycemia, hypoglycemia, International Diabetes Federation-diabetes and Ramadan, Muslims, Ramadan fasting, safety

INTRODUCTION

During the 9th lunar month of Ramadan, fasting is prescribed for adult Muslims from just before dawn to just after sunset.^[1] This daytime fasting forbids the consumption of any food, drink, and any orally taken medications in addition to the prohibition of smoking and sexual intercourse during the daytime. The fasting period may last for up to 20 h, depending on the season and geographic location. Ramadan fasting (RF) is obligatory for all Muslim adults.

Nonetheless, specific groups may be exempted from fasting, including those with illnesses. Medical practice is interested in what illnesses provide an exemption from fasting and how best to manage

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these conditions during RF. This group of individuals may include some people with diabetes.^[1]

The diabetes and Ramadan (DaR) international alliance was incorporated in January 2013. DaR engages stakeholders from known professional groups and individuals to raise awareness of managing diabetes during Ramadan. The formation of DaR has led to collaborations being forged with other interested organizations. DaR international alliance collaborates with many of those interested in the management of diabetes during Ramadan to make it safe for those who observe it. Perhaps, the most notable contributions are its annual meeting and the continuously updated guidelines.^[2,3]

The declared objectives of DaR include enhancing understanding of how best to manage diabetes during the month of Ramadan by uniting health-care professionals (HCPs), patient associations, Muslim societies, public and private stakeholders in education and research. In addition to several local and national conferences, since its inception, DaR has held 8 international meetings before.^[2,3]

The 9th DaR international alliance annual conference was held over 2 days (January 21th and 22th) for the MENA region time zone and 2 days (23rd and 24th January) for South East Asia time zone. Both were virtual due to the travel and social distancing restrictions. The agenda of the conference was similar in the two time zones with some overlap of speakers. The present manuscript is based on highlights of the MENA zone event [Table 1]. It targets those who could not attend the live sessions. The event was an opportunity to launch the 2021 edition of the International Diabetes Federation (IDF)-DaR guidelines on DaR [Figure 1].

CONFERENCE HIGHLIGHTS

Passion to fasting, physiology, and impact on physical and mental health

After the opening ceremony, the passion to fasting, physiological changes, and impact on physical and mental health were reviewed by F Al Awadhi (Dubai, UAE), N Lessan (Abu Dhabi, UAE), and E Al Ozairi (Kuwait), respectively. It is well established that RF can lead to dramatic changes in meal schedules, fluid intake, sleep

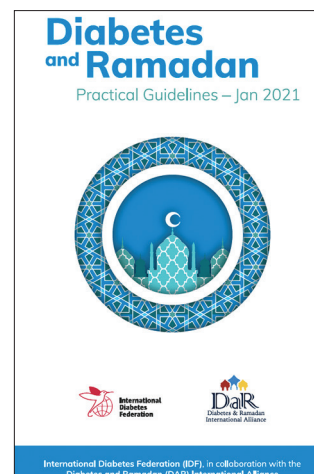


Figure 1: The 2021 version of International Diabetes Federation-diabetes and Ramadan diabetes and Ramadan practical guidelines was launched during the conference. The hard copy comes in colored and fully illustrated 330 pages

patterns, and circadian rhythms. These changes can have an impact on hormone levels and their normal rhythms. RF can be associated with favorable physiological changes among healthy individuals, such as decreased body weight and favorable changes in lipid profile. In people with diabetes, however, RF can be associated with certain risks due to the pathophysiology that disrupts average glucose homeostatic mechanisms.

Holistically, fasting can positively affect compassion, empathy, and social interactions. Fasting during Ramadan can help promote greater spirituality and mental well-being. It can help alleviate adverse psychosocial outcomes of feeling stressed or depressed and bring forth positive mood changes. Lifestyle changes that accompany Ramadan, such as eating times, diet, physical activity patterns, and sleeping schedules, can affect mental and physical well-being. All these should be considered by people with diabetes seeking to fast well ahead of Ramadan and the HCPs who advise them.

Old concepts and newer strategies

To fast or not to fast; toward an evidence-based stratification. A new IDF-DAR risk stratification.

The risks of fasting include hypoglycemia, hyperglycemia, diabetic ketoacidosis, and dehydration. Physicians must quantify these risks and stratify each individual accordingly. With the appropriate guidance, many people with diabetes

Table 1: The Diabetes and Ramadan 2021 conference themes

Passion to fasting, physiology, and impact on physical and mental health
 To fast or not to fast; toward an evidence-based stratification
 Ramadan-focused education during the COVID-19 era
 Complications: Hyperglycemia and hypoglycemia
 Management of T2D: Surveys, orals, injectables, and newer studies
 Management of T1D and adolescents and adults: Contrasting adolescents and adults, regional differences, and MDI practicalities
 Fasting by high-risk groups: Conception, CVD and CKD
 Bioethical considerations: Scholars and physicians getting closer.
 Quality of current research data, grading of evidence, and future research directions

T2D: Type 2 diabetes, T1D: Type 1 diabetes, CVD: Cardiovascular disease, CKD: Chronic kidney disease, MDI: multiple daily injection

can fast during Ramadan safely. Still, they must be under the close supervision of HCPs and maintain awareness of the risks of fasting. A new IDF-DAR risk stratification presented by M Hassanein (Dubai, UAE) defines three risk categories. It provides a risk score that includes multiple factors that play an essential role in the fasting decision recommended for each. Individuals who fast against medical advice should follow expert and detailed guidance to avoid serious complications. He argued that there is an urgent need for risk stratification as the CREED study found that nearly 2/3 (62.6%) of physicians referred to published Ramadan guidelines or recommendations for fasting management.

A new diabetes and Ramadan risk scale

B Afandi (Al Ain, UAE) presented the basis for development of the new classification was Beta-tested in 300 experienced diabetes care physicians using an online survey with several scenarios. There was an overwhelming consensus except for some disagreement between physicians on classifying patients' risk with specific scenarios. He stated a few (disputable) cases using the new risk calculator. For instance, in type 1 diabetes (T1D), the calculated risk using the new scoring system was 5.5 = moderate. Nonetheless, the survey results considered the patients as high risk by more than half of the respondents (52%), intermediate by over a quarter (28%), and low risk by one in 5 (20%). Notwithstanding the respondents' experience, the stratification remains an opinion-based assessment made at the respondents' discretion. Outcome-based validation is urgently needed in actual fasting

patients and indeed should have been included in the stratification process to advance its methods on previous scales. Till such time, the door remains open for debates and disputes.^[4]

PreRamadan preparation and Ramadan-focused education

The critical component of safe fasting for people with diabetes is the preRamadan preparation and focused education targeting people with diabetes, HCPs, and the public. It was underscored by BS Zainudin (Singapore) that for education to be effective, it needs to be culturally sensitive and include community and religious leaders, to align religious and medical messages. Risk quantification, self-monitoring of blood glucose (SMBG), diet, physical activity, medication adjustment, recognition of complications, and when to break the fast are all essential prerequisites. Timely RF education can guide patients to fast safely and healthily. Benefits were demonstrated on glycemic control, weight loss, and reduced risk of hypoglycemia even in higher-risk individuals, and positive outcomes may extend beyond Ramadan.

Ramadan-focused education in the COVID-19 era is undoubtedly challenging. The global survey indicated that many patients missed out on education sessions during Ramadan of 2020. Some health-care facilities were able to reach out to their patients virtually through telehealth consults. Poor glycemic control is associated with adverse outcomes. MY Ahmedani (Pakistan) stressed that education was demonstrated to improve glycemic control. He also highlighted that adopting technology in telemedicine is essential to circumvent the current circumstances (phone or video calls, when available, are valuable alternatives to ensure continuity of care).

Monitoring during Ramadan

PreRamadan assessment and education are crucial. The most critical metabolic complications of fasting are hypoglycemia and hyperglycemia. Both patients and health-care professionals should take appropriate measures to avoid both of them. These measures include adjusting antidiabetic medications and increasing SMBG. Monitoring during RF was discussed by R Malik (Algeria).

He explained that for type 2 diabetes mellitus, consideration of patient profile, risk, benefits of therapeutic classes, analog insulins, and improved SMBG are essential tools to ensure safe fasting with reasonable blood glucose control during Ramadan. The use of continuous glucose monitoring (CGM) or intermittent flash glucose monitoring female genital mutilation may provide more detailed information, especially for those treated with multiple insulin doses and especially for type 1 diabetes mellitus.

Hyperglycemia in Ramadan: A forgotten enemy?

Osama Hamdy (Boston, USA) addressed postprandial hyperglycemia as a forgotten risk factor during Ramadan. He reiterated that postprandial hyperglycemia is linked to increase cardiovascular risk. Most hyperglycemic problems are related to changes in medications and eating habits during Ramadan. He proposed several strategies to mitigate the risk of hyperglycemia. Blood glucose monitoring is essential in detecting hyperglycemic problems; CGM may be a good tool when available. Reducing carbs and specifically high GI carbs and increasing protein may help improve postprandial glycemic spikes. Adjustment of short-acting insulin may be needed for patients treated with metered-dose inhaler.

Hypoglycemia during Ramadan: A reality check

Muslims with type 2 diabetes (T2D) frequently fast during Ramadan, and some may be at an increased risk of hypoglycemia. Wasim Hanif (Birmingham, UK) addressed the strategies to reduce the risks of fasting. People with diabetes who wish to observe the fast should receive a preRamadan assessment, risk stratification, and structured diabetes education. A careful selection from the currently available wide range of antiglycemic agents and individualized therapy is crucial to minimize the risk of hypoglycemia. The newer antiglycemic agents such as incretin-based therapies and sodium glucose cotransporter 2 (SGLT-2) inhibitors have an inherently low risk of hypoglycemia. These attribute attractive options. Further randomized, controlled trials are needed to ensure the safety of these drugs.

Pharmacological management during Ramadan in type 2 diabetes

A key question was asked, namely: Are all T2D patients the same? The DAR Global survey 2020

revealed a wide variation in practices as illustrated by Z Hussein (Kuala Lumpur, Malaysia). In addition, it identified high rates of suboptimal glycemic control and distribution of medications. Interestingly, most patients reported that the COVID pandemic did not impact their intention to fast. Hypoglycemia and hyperglycemia frequently occurred, particularly in older persons. Monitoring was reportedly practiced by only 73%, and education was received by only 43% of the survey respondents. To answer the question, are SU's and SGLT2 inhibitors safe in Ramadan? Several new studies were reviewed by M Hassanein (Dubai, UAE). These studies have allowed us to move from "guesswork" to evidence. Physician surveys have indicated evolving perceptions on the use of this class of antiglycemic agents with much more confidence. SGLT2s are now acceptable for most patients due to their low-risk profile, and physicians are not shying away from prescribing them. Exercising caution in limited circumstances is still recommended, particularly in patients at risk of dehydration. Various members seem to have similar properties; thus, class attributes do prevail. On the contrary, recent trials have demonstrated apparent differences within the SU class. Third-generation SUs should be used preferentially as these have shown less risk for hypoglycemia. Dose adjustment is needed primarily when they are used in combination with other glucose-lowering agents. Considerable evidence has emerged for injectable therapies as well. Glucagon-like peptide-1 receptor agonists are relatively safe, with no need for dose adjustments as there was no increased risk of hypoglycemia.

Furthermore, insulin regimens remain challenging for RF: the devil is in the details: the type of insulin and dosing frequency are important considerations and need to be decided well ahead of Ramadan. Patients on insulin therapies need to work closely and have access to their health-care providers throughout the fasting period. Individualization is a key to both insulin initiation and intensification. It is imperative to balance attention to both hypoglycemia and hyperglycemia risks. Whenever possible, it is recommended to use agents with evidence for low hypoglycemia risk. In this regard, the longer-acting basal insulin analogs

have demonstrated a lower risk of hypoglycemia and are thus preferred as discussed by the second author of this report. The role of insulin pump therapy and practicalities of their management were discussed with a focus on adolescents fasting during Ramadan were discussed by N elbarbary (Cairo, Egypt). She highlighted the advantages of use of high technology in diabetes care during Ramadan.

New and recent studies in Ramadan

The conference had a couple of “encores” for recent clinical trials. SOLIRAM is an international, prospective, observational study evaluating the safety and effectiveness of the fixed-ratio combination (FRC) of insulin glargine 100 U/mL and lixisenatide (iGlarLixi) in people with T2D who fast during Ramadan. SOLIRAM has two waves. The results using descriptive statistics from participants who fasted during Ramadan in 2020 (Wave 1) were presented. Adults with T2D who had taken iGlarLixi for ≥ 3 months before inclusion and who planned to fast for ≥ 15 days during Ramadan were enrolled from 5 countries. During the study, iGlarLixi treatment was adjusted as per routine practice by the treating physician. The results of wave one concluded that in a real-world setting, people with T2D treated with FRC iGlarLixi were able to fast for most of the month of Ramadan; the incidence of hypoglycemia was low and glycemic control was improved.^[5] The observational (ORION) study examined the real-world safety and effectiveness of insulin glargine 300 U/mL in participants with T2D who fast during Ramadan. The authors concluded that people with T2D treated with Gla-300 who fasted during Ramadan had a low risk of severe/symptomatic hypoglycemia and improved glycemic control.^[6]

Management of diabetes in the elderly during Ramadan

The “pearls of wisdom” of practical guidance on diabetes care during Ramadan for older adults was presented. These included (1) risk is higher with the older generation SUs and therefore should be avoided, (2) hypoglycemia and hyperglycemia occur in greater frequency than younger individuals as highlighted in the DaR global survey, (3) careful planning would allow for a safer Ramadan experience in most older adults with diabetes, (4) SMBG should be encouraged and implemented meticulously,

and (5) using agents with inherently low risk of hypoglycemia.

Management of type 1 diabetes and adolescent patients

From the recent surveys, differences are evident between adults and adolescents. The seminal epidemiological study (EPIDIAR) was conducted two decades ago. It was getting increasingly apparent that its findings are certainly not fully applicable to adolescents as they were not included in representative numbers. Since then, many authors have demonstrated that adolescents may fast safely. Moreover, some may improve their glycemic control during Ramadan, provided they work closely with their health-care providers. The DaR Global Survey confirmed several differences in intentions to fast, hypo, hyperglycemia, and receipt of education. Regional differences occur in practices among patients with both T1D and T2D. All risk factors need to be considered in making management decisions. Attention to the practical aspects of insulin therapy for various regimens was highlighted. Basal-bolus seemed the best option for most patients due to inherent flexibility. Monitoring and dose adjustment are vital for safety and efficacy. Management of diabetes in patients using insulin pumps should benefit maximally from the various advantages of advanced technology.

High-risk groups: Conception, cardiovascular disease, chronic kidney disease

Fasting feasibility and practical management of high-risk groups were discussed by B Salih (Abu Dhabi) and T Chawdhury (London, UK). For pregnancy, it is conventionally included in the high-risk group if not on the standard glycemic targets. However, common sense should prevail as the glycemic targets are the same for fasting and nonfasting women. Management should utilize the same principles for dose adjustment of metformin and insulins monitoring of the glucose, general health of both the mother and new fetus. Both cardiovascular disease and chronic kidney disease (CKD) impart high-risk status on the individual during RF. However, there is no consistent increase in cardiovascular events nor worsening of renal function. Optimization of care includes good

hydration for all patients with CKD and discussion between diabetes and renal specialists with a view to individualization of care for those with advanced CKD.

Bioethical considerations

Scholars and physicians continue to get closer in their approach to RF for people with diabetes.^[1] There was a dedicated session to underscore the importance of religious and medical unity. Greater harmony between medical and religious advice was apparent with the endorsement of religious regulatory authority. RF is a religious obligation ordained on all healthy adult Muslims. However, the Islamic teaching exempted those afflicted with illness from this obligation. The increasing harmony between physicians and religious scholars should ensure safer fasting for people with diabetes. Furthermore, it is noteworthy that Egypt's highest religious regulatory authority has endorsed the risk stratification groups defined in these IDF-DAR Practical Guidelines. Risk level and medical and religious recommendations were included next to each other.

R Malik (Doha, Qatar) ended the conference by a thoughtful review by of the grading of evidence and a futuristic vision of future research directions. This was included in the new edition of the guidelines for the first time (Chapter 15).^[7] The first author of the report gave the wrap-up and take home message.

CONCLUSIONS

The 9th DAR conference was held virtually this year but still managed to attract high-quality research focused on RF. The highlight of the conference was the announcement of the updated guidelines that will help HCPs provide an objective assessment

of the risks associated with RF. This year we saw greater harmony between medical and religious recommendations on RF. An emphasis on education and preRamadan planning is paramount for patients to achieve a safe Ramadan experience.

Authors' contribution

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Conflicts of interest

There are no conflicts of interest.

Compliance with ethical principles

Not applicable. No prior ethical approval is required for editorial type of study.

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