

The 8th Diabetes and Ramadan International Alliance Conference: January 23–24, 2020, Dubai, United Arab Emirates

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Abstract

The 8th Ramadan and Diabetes International Alliance Annual Conference was held over 2 days on January 24th and 25th in Dubai, United Arab Emirates. The program included six sessions in total. The three states of the art lectures addressed (a) an overview of the current knowledge on insulin therapy during Ramadan, (b) journey of diabetes from EPIDIAR, to CREED and ending by DAR-MENA-T2DM, and (c) feasibility and management of fasting after bariatric surgery. Sessions on the 1st day considered four themes spanning from the impact of Ramadan on physical and mental well-being, efficacy and safety of newer antidiabetic medications during Ramadan, adherence to medications for diabetes and hypothyroidism, and the safety of Ramadan fasting in high-risk groups (cardiovascular and renal). The 2nd day started with a session on bridging the gap between physicians and religious scholars, including a live question and answer session “ask the imam.” The rest of the sessions covered management of type 1 diabetes during Ramadan, patients and doctors perceptions of fasting from various regions and finally a scientific session on nutrition and weight management during Ramadan. RaD activities seem to develop progressively in variety and quality of content and also far-reaching audiences and participants.

Keywords: Diabetes, ethnicity, fasting, hyperglycemia, hypoglycemia, Muslims, Ramadan, safety

INTRODUCTION

Fasting is prescribed on adult Muslims during this month from just before dawn to just after sunset.^[1] This daytime fasting forbids the consumption of food and drink as well as oral and injected medications in addition to smoking and sexual intercourse. Depending on the season and geographic location,

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each period of fasting may last for up to 20 h. Although fasting is obligatory for all Muslim adults, certain groups are exempted. The relevant aspect of medical practice is that “being ill” is one of the justifications for people not to abide by observing the fast.^[1] This may include some individuals with diabetes. Estimates suggest that there are 148 million Muslims living with diabetes worldwide. Good quality research and evidence-based approach have been repeatedly called for.^[2,3]

THE DIABETES AND RAMADAN INTERNATIONAL ALLIANCE

Diabetes and Ramadan (DaR) International Alliance was formed in January 2013. DaR engages stakeholders of known professional groups to raise awareness of managing diabetes during Ramadan.^[4] This led to collaborations with other interested organizations in particular IDF Africa Region and Europe Diabetes UK. DaR International Alliance works with many of those involved with the management of diabetes during Ramadan fasting to make it a safe and enjoyable month for those who observe it. Perhaps the most prominent activities were its annual meeting and the recent guidelines.^[5]

DaR aims to enhance understanding of how best to manage diabetes during the month of Ramadan by uniting healthcare professionals, patient associations, Muslim societies, public and private stakeholders in education, and research. In addition to several local and national conferences, since its inception, DaR held 7 international conferences. The 8th DaR International Alliance Annual Conference was held over 2 days on of January 24th and 25th in Dubai, United Arab Emirates. It was attended by 643 delegates and involved 43 speakers and moderators.

CONFERENCE HIGHLIGHTS

The state of the art lectures

Three states of the art lectures were delivered during the conference. Mohamed Hassanein, host of the meeting, presented an overview of the current knowledge on insulin therapy during Ramadan. The use of newer agents with lower risk of hypoglycemia was recommended whenever possible. He also alluded to yet unpublished data from the ORION

trial, an observational study of the use of insulin Glargine U300 during Ramadan. A multicenter, multinational, prospective, single-arm, observational study to describe the clinical outcomes in patients with type 2 diabetes (T2D), treated with insulin glargine 300 U/mL (insulin glargine U300) before, during and after the period of Ramadan. Its primary objective was the percentage of patients experiencing at least one episode of severe and/or symptomatic documented hypoglycemia with plasma glucose ≤ 70 mg/dL (3.9 mmol/L) during the pre-Ramadan, Ramadan, and post-Ramadan periods. Reportedly, the risk of hypoglycemia was low, and patients using this insulin were able to experience safer fasting. Its full report is eagerly awaited. The journey of diabetes and Ramadan research was revisited from EPIDIAR to CREED and ending by DAR-MENA-T2DM^[6-8] was revisited by Abdul Jabbar who has participated in this from 1989 onward and underscored the most important landmarks. The three major epidemiological studies of DaR found that most people with diabetes would wish to observe the fast despite their illness. Feasibility and management of fasting after bariatric surgery were reviewed by Ebaa Al-Ozairi based on their recent studies from Dasman Diabetes Center in Kuwait. A prospective analysis of nutritional intake, hunger and satiety and adaptive behaviors during fasting was undertaken.^[9] Fasting was well tolerated in persons who had undergone sleeve gastrectomy. However, the speaker emphasized that it is advisable to raise awareness about dietary protein intake and managing medications appropriately during fasting.

Impact fasting Ramadan on physical and mental wellbeing

Mo'ez Al-Islam Faris started the 1st day by reviewing the metabolic impacts of diurnal intermittent fasting during Ramadan in healthy Muslims. Ramadan fasting (RDIF) may incur a small protection against inflammation and oxidative stress, and improvements in glucometabolic markers and body anthropometrics in healthy controls. Benefits of fasting Ramadan in diabetes physical and mental well-being-Yakoob Ahmedani (Pakistan) enumerated the benefits of Ramadan fasting to promote weight loss, reduce insulin resistance,

improves lipid profile, reduces blood pressure, reduces anxiety and depression, prevent cancer, and improve NAFLD. Ebaa AlOzairi presented data from Dasman Diabetes Center on the positive impact of fasting during Ramadan in diabetic individuals and depression. This contradicts some of the older recommendations that such patients should not fast at all.

Safety of newer antidiabetic medications in Ramadan

The use of SGLT2 inhibitors during Ramadan was discussed by Al Amin bdelGhadir (UAE). He reviewed the available data from the five studies that included both low risk and high-risk patients. He also alluded to the physicians' opinions and practices on the subject made by an early online survey. He specifically addressed the fact that hypoglycemia is mostly increased when this class is used together with insulin. He also questioned the undue caution in the use of SGLT2 inhibitors in people on diuretics on the basis that benefit was obtained in the recent heart failure studies despite being treated with diuretics.

The host of the meeting, Mohamed Hassanein, addressed the frequently asked question of whether the risk of hypoglycemia during Ramadan fasting is the same for all members of the SU class. He used data from an unpublished observational study of effectiveness and tolerability of Gliclazide MR 60 mg in diabetic patients fasting during Ramadan (DIA-RAMADAN; ClinicalTrials.gov Identifier: NCT04132934). Patients taking Gliclazide MR had low rates of confirmed or any hypoglycemia with no severe hypoglycemia while maintaining good glycemic control.

Rakesh Sahay reviewed the two Ramadan-specific studies, namely Lira-Ramadan and Lixi-Ramadan. Lira-Ramadan was a randomized trial of the efficacy and safety of liraglutide compared to sulfonylurea during Ramadan in patients with T2D.^[10,11] The study compared the effects of liraglutide 1.8 mg and sulfonylurea, both combined with metformin, on glycemic control in patients with T2D fasting during Ramadan. Despite lower fructosamine levels and body weight at the beginning of Ramadan, the use of liraglutide showed similar glycemic improvements, fewer hypoglycemic episodes,

and greater bodyweight reduction compared with sulfonylurea.^[10] Despite the proportion of subjects reporting adverse effects was similar between the groups, the event rate was higher with liraglutide compared with sulfonylurea group. Moreover, as it was expected were gastrointestinal adverse effect related to GLP1 mode of action. LIRA-Ramadan provides evidence for liraglutide being safe and efficacious for the management of T2D during Ramadan fasting.^[9] Lixi-Ram study adding lixisenatide to basal insulin (BI) instead of sulfonylurea (SU), versus continuing SU + BI was assessed in people with T2D who intended to fast during Ramadan (2017). He reported that compared with SU + BI, lixisenatide + BI provided lower rates of any hypoglycemia in people with T2D during Ramadan fasting. And surprisingly, none of the hypoglycemia events in the lixisenatide + BI group occurred during nonfasting hours compared with SU + BI group, where most of the event happened during the fasting period, which clearly propose that Lixisenatide + BI therapy may be a suitable treatment option during fasting. Therefore, he concluded that GLP1-RA therapy is a suitable option for use in people with diabetes who elect to fast during Ramadan supported by the decreased risk for hypoglycemia.^[11]

Medication adherence in Ramadan

Shehla Sheikh (India) discussed the issue of adherence to antidiabetes and related medication and considered the potential impact of having to observe the Ramadan fast on these practices. Tamer El Sherbiny (Egypt) presented the results of a study on thyroxine replacement therapy during Ramadan. Of 250 patients, preferences of the timing of intake of their thyroxine replacement therapy clustered around three methods. In addition, adherence to thyroxine in Ramadan predicted the adequacy of replacement therapy. Adherence was associated with a higher rate of euthyroidism after Ramadan (74%), vice versa, nonadherence resulted in dysthyroidism after Ramadan in previously euthyroid patients (35%).

Cardiovascular and renal safety in diabetics during Ramadan

Ines Khochtali gave a concise summary of the contributions of her Ramadan Research Group in

(Monstair, Tunisia) effects of fasting in high-risk cardiovascular disease (CVD) patients. Their study included effects of Ramadan fasting on platelet reactivity in diabetic patients treated with clopidogrel, metabolic effects of Ramadan fasting in patients at high risk of cardiovascular diseases and impact of lipid profile on thrombin generation during Ramadan fasting in patients with cardiovascular risks.^[12-14] It was noted a significant and discrete rise in blood glucose level, triglycerides, cholesterol creatinine, and HOMA-IR during Ramadan. Ramadan fasting significantly decreased platelet sensitivity to clopidogrel in DM patients during and after Ramadan. The effect is possibly related to an increase of glycemia and serum lipids levels induced by fasting. In addition, it was found that Ramadan is associated with an increase of Aspirin resistance only in patients with diabetes. It is noteworthy that the Tunisian groups have recently been very productive in Ramadan research and a special issue of their national journal (*La Tunisie Medicale*) was dedicated for Ramadan and health. On the other hand, an increase in the risk of stroke during Ramadan fasting could be detected by the group from Alexandria as reported by Arafa Elshabrawy and without increased frequency of hospitalization of stroke as a whole. Coronary artery disease and heart failure emergencies during Ramadan fasting were discussed by Dr Abdul Basit, from Pakistan. He concluded that patients with stable cardiac disease may fast during the month of Ramadan since most studies show no significant adverse effects of fasting on these patients. Moreover, the safety of fasting in chronic kidney disease (CKD) patients with native or transplanted kidneys was discussed Dr Alaa Bashir from Dubai. He looked at and compared patients with diabetes and moderate CKD to patients with diabetes and moderate CKD who did not fast. There was no significant deterioration in renal function, no increase in mild or moderate hypoglycemia, and no increase in cardiovascular events or hospital admissions.

Bridging the gap between science and religion in Ramadan

Mohamed Sandid gave an excellent presentation on the Lebanese experiencing of jointly working

with the Imams and the community. Bachar Afandi (Al Ain, UAE) sounded the Alarms for the increased risk of patients fasting against medical advice despite a well-structured educational and fairly supportive and sensitive advocacy services. "Ask the imam" was a fully interactive live question and answer session. Several questions were presented regarding fast breaking-qualifying travel, definitions of fasting-imposing features of puberty on bases of age or appearance of solid versus soft physical features of puberty in males and females. The uniform age of 15 years is established for both genders. However, the invited imam made a distinction of wet dreams for boys and menstruation for girls as hard markers for puberty on one side and lanugo hair (contrast to thick black hair) in the axillary and pubic regions and the early changes of voice for boys as soft signs that are taken to indicate puberty on their own. Discussions included rulings for the terminally ill, the elderly, specific rulings for various medications taken per nose, per rectum, and as injections.

Type 1 diabetes and fasting

Nancy Albarabary presented the recent management recommendations for adolescents and children with T1D who wish to observe the fasting. Esphe G Fojas described management and outcomes of T1D fasting among older children and adolescents attending a fully resourced center such as the Imperial College London Diabetes Center in Abu Dhabi, UAE. Whereas, Mohamed Suliman used the experience he had from Sudan to illustrate the management of adults T1D during Ramadan in resource-restricted settings. Under both circumstances, education, support, and individualization remain the key elements of good management. However, adaptations may be needed for one to survive within his means. For instance, whereas possible flexibility to allow T1D patient to fast with full access to modern insulins and real-time monitoring, recourse to the Farwa that all T1D patients should be full exempted from fasting when cost of adequate motoring is not available or unduly prohibitively expensive. Finally, Mohamed Hassanein attempted to address the question of can and how technology minimize risks to people with diabetes fasting during Ramadan fasting. He considered the improved profiles of various

modern medications, insulin pump therapy and real-time/noninvasive monitoring. Again, support remains a crucial element to make the best use of these advances. Examples of T1D patients, high-risk groups, and pregnant women were utilized for these arguments.

Attitude, weight and nutrition management during Ramadan

The last two sessions were dedicated to sharing experiences on attitude of patients and physicians and also on weight and nutrition management during Ramadan. Reem Alamoudy (Saudi Arabia) described the experience with the attitudes and habits of patients with T1D during fasting Ramadan.^[15] The study comprised a prospective cohort of patients with T1D who were on insulin pump ($n = 61$) or multiple daily insulin injections ($n = 95$) regimen. The patient questionnaires captured the frequency of self-monitoring of blood glucose, the need to make changes in insulin regimen by patients, timings of insulin administration, performing carbohydrate counting, and levels of physical activity. They found that fasting Ramadan is associated with significant and variable changes in the attitudes and behaviors of patients with T1D with no difference in glucose control between patients on insulin pump or MDI regimen. Siham Bouchareb shared experience from the Netherlands on the development and implementation of local guidelines. Rachid Malek described the DaR organized global program for training health-care professionals and patients. He described the overall program and used the Algerian experience as an example of its implementation. Finally, a couple of basic studies were presented. Early exploratory experiments on the thermic effect of food and during Ramadan fasting were described by Tomader Ali from ICLDC-Abu Dhabi group and on aspects of nutritional education nutritional during Ramadan were presented by Barakatun Nisak from Malaysia. The meeting closed by Professor Ahmed Hassoun of Dubai Medical College and Dubai Diabetes Center giving a commentary and some final closing remarks.

CONCLUSIONS

The 8th DaR edition has provided an update on the current challenges and future ambition on

optimization of the management of diabetes and allied conditions during Ramadan. The presentations included a mixture of overviews, perspectives, and recently published or completely unpublished work. The admixture of these types of presentations kept both researchers and practicing clinicians interested throughout the 2 days. Although many of the themes are old, focus on newer antidiabetic agents made some difference. It was nice for the newcomers to the Ramadan research to hear the journey of diabetes from EPIDIAR to CREED and ending by DAR-MENA-T2DM and recognizing many of the people, places, and themes that evolved over the years. Despite its lack of its formal incorporation as an independent body, the activities of RaD Alliance seem to develop progressively in variety and quality of content and also reaching the audience far afield. However, formal incorporation should give DaR the opportunity to move to newer roles such as raising and sharing resources from rich parts to less well-off regions of the world. This should advance its role to a higher-level professional and advocacy over and above its current work of education and production and guidelines.

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Conflicts of interest

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Compliance with ethical principles

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