Comparison of Two Health Education Modalities on Safe Ramadan Fasting In People with Type I Diabetes Mellitus

Thesis

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By

Mo'men Bahaa El-Din Saad

M.B.B.Ch

Under supervision of

Prof. Manal Mohammed Abushady

Professor of Internal Medicine & Endocrinology
Faculty of Medicine- Ain Shams University

Prof. Mona Mohamed Abdel-Salam

Professor of Internal Medicine & Endocrinology
Faculty of Medicine- Ain Shams University

Prof. Yara Mohamed Eid

Professor of Internal Medicine & Endocrinology
Faculty of Medicine- Ain Shams University

Faculty of Medicine
Ain Shams University
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Mo'men Bahaa El-Din Saad

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List of Abbreviations

Abb.	Full term
ADA	*American Diabetic Association.*
BMI	*Body Mass Index.*
BPs	*Bio Psychosocial Model.*
CHO	*Charbohydrates.*
CKD	*Chronic Kidney Disease.*
DAFNE	*Dose Adjustment For Normal Eating.*
DAR	*Diabetes and Ramadan International Alliance.*
DKA	*Diabetic Ketoacidosis.*
DSME	*Diabetes Self Management Education..*
EPIDIAR	*Epidemiology of Diabetes and Ramadan*
FBG	*Fasting Blood Glucose.*
GDM	*Gestional Diabetes Mellitus.*
GI	*Glycemic Index.*
HbA1C	*Glycated Haemoglobin A1C.*
HCPs	*Health Care Professionals.*
HDL	*High Density Lipoprotein.*
IDEA	*Interactive Dialogue to Educate and Activate.*
IDF	*International Diabetes Federation.*
LDL	*Low Density Lipoprotein.*
MDI	*Multiple Daily Injection.*
MNT	*Medical Nutrition Therapy.*
MUFA	*Mono Unsaturated Fatty Acids.*

List of Abbreviations (Cont...)

Abb.	Full term
PHE……...:	*Personal Health Engagement.*
PPBG .....:	*Post-prandial Blood Glucose.*
PUFA…….:	*Poly Unsaturated Fatty Acids.*
RNP.....:	*Ramadan Nutrition Plan.*
SFA……..:	*Saturated Fatty Acids.*
SGLT2.....:	*Sodium Glucose Transporter*
SMBG.....:	*Self Monitoring Blood Glucose.*
SU.....:	*Sulfonylurea.*
T1DM .....:	*Type 1 Diabetes Mellitus.*
T2DM .....:	*Type 2 Diabetes Mellitus.*
TG.....:	*Triglycerides.*

INTRODUCTION

Adult Muslims are obliged to start fasting during the month of Ramadan. Fasting entails refraining from all food, drink, tablets and injections (vitamins & fluids) between sunrise and sunset; a period which varies by geographical location and season. Children, elderly people, travelers, pregnant or nursing women and unhealthy individuals are exempt from fasting. Although exempt, many diabetics refuse to take this concession as they feel psychologically & spiritually inclined to fast along with other Muslims ***(AlAlwan & Al Banyan, 2010).***

Fasting at Ramadan carries a very high risk for people with T1DM. This risk is particularly exacerbated in poorly controlled patients and those with limited access to medical care, hypoglycemic unawareness, unstable glycemic control, or recurrent hospitalizations ***(Chamsi-Pasha & Aljabri, 2014).***

Structured education interventions have been endorsed by the National Institute for Health and Clinical Excellence as important in empowering patients to improve their journey with diabetes. In a large observational study, patients who fasted during Ramadan without attending a structured education session had a fourfold increase in hypoglycaemic events, whereas those who attended an education programme focusing on Ramadan had a significant decrease in hypoglycaemic events ***(Hui et al., 2010).***

There're multiple forms of health education programs e.g:

- DAFNE (Dose Adjustment For Normal Eating) is skills training program promoting dietary freedom improved quality of life and glycaemic control in people with type 1 diabetes without worsening severe hypoglycaemia or cardiovascular risk ***(DAFNE study group, 2002).***

- DSME (Diabetes self-management education) is the ongoing process of facilitating the knowledge, skill, and ability necessary for diabetes self-care. This process incorporates the needs, goals, and life experiences of the person with diabetes and is guided by evidence-based standards ***(Funnell et al., 2010).***

Conversation Map aim to help people with diabetes experience a healthier Ramadan. The interactive Map covers a number of topics including understanding the risks and complications of fasting and the importance of creating a diabetes management plan during this time ***(MAP, 2014).***

Aim of the Work

Comparison of two modalities of diabetes education programs on safety & efficacy of them in Ramadan fasting in people with T1DM.

Chapter 1

RAMADAN FASTING AND TYPE 1 D.M

Ramadan is the 9th month of the Muslim calendar when the Holy Quran was sent down from heaven. Fasting during Ramadan, one of the five pillars of Islam, is obligatory for all healthy adult and adolescent Muslims from the age of 12 years. Depending on the geographical location and season, the duration of the daily fast may range from a few to 20 hrs. Muslims who fast during Ramadan must abstain from eating, drinking, taking oral medications, and smoking from early dawn (Sohur) until sunset (Iftar). There is no restriction on food or fluid intake between sunset and dawn. The main meal, Iftar is taken at sunset and usually heavy meal with extra sweet foods and deeply fried food. Sohur is taken before sunrise with lighter meal with complex carbohydrate. Children, elderly people, travelers, pregnant or nursing women and sick individuals are exempted from fasting. Although exempted, many Muslims, both adults and children refuse to take this concession as they feel psychologically and spiritually inclined to fast along with other Muslims ***(Al Alwan et al., 2012).***

There should be frequent monitoring of blood glucose, especially for those who are on insulin. A healthy balanced diet should be maintained. Complex carbohydrates are recommended at the predawn meal, which should be taken as

late as possible and simple carbohydrates at the sunset meal. Fluid intake should be increased in the non-fasting hours. A normal level of activity should be maintained, avoiding excessive activities in the hours before the sunset meal. The fast should be broken if glucose level is low (<4 mmol/L) or patient experiences symptoms of hypoglycemia and if glucose level is >16.7 mmolL ***(Azad et al., 2012).***

Fasting during the day influences the control of diabetes because of changes in meal times, the type of food eaten and daily life-style. Therefore, there is high risk of developing acute complications like hypoglycemia or ketoacidosis during fasting. The major risk of diabetics who fast during Ramadan is hypoglycemia. On the other hand, the excessive consumption of sweet and fried foods especially with the Iftar meal may pre-dispose to hyperglycemia. Many patients with diabetes insist on fasting during Ramadan, creating a challenge for themselves and their health care providers despite knowing all the risks ***(Al Alwan et al., 2012).***