

# OP-0036 – Diabetes and Ramadan (International Prospective Observational Study)



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## Background

Over 116 million Muslims with Diabetes fast from dawn to sunset during the holy month of Ramadan (a Lunar-based month)<sup>2</sup>. The CREED study reported that 94.2% of type 2 diabetes patients fast for a minimum of 15 days while 64% fast every day during Ramadan<sup>3</sup>. Ramadan fasting may increase the risk of hypoglycemia, hyperglycemia, diabetic ketoacidosis, dehydration and thrombosis<sup>2</sup>. To minimize these risks, HCPs must pay attention to pre-Ramadan glycemic control status, patient education, diet, physical activity, SMBG and adaptations in treatment regimen<sup>4,5</sup>. This raised the need for exploring real life practices to enhance evidence-based management of the disease during Ramadan fasting especially that most of the evidence is retrospective data and in need for an update<sup>3,6</sup>.

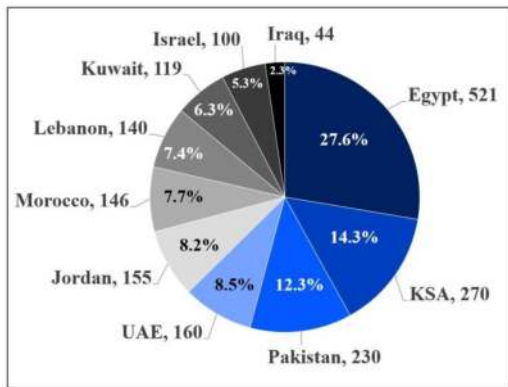
## Aims

In addition to updating description of Type 1 and Type 2 diabetic patients pattern of care, this study aimed to investigate the effect of fasting during Ramadan on glycemic control, lifestyle, body weight, treatment and patient safety.

## Methods

A total of 1894 adult diabetic patients (Type 1 and Type 2) were recruited of which, 1885 were evaluable from 10 different countries from Middle East and North Africa region.

Figure 1: Distribution of patients per country



Data were collected 2 times; six weeks prior to Ramadan and one to two months after Ramadan.

## Results

Table 1: Patients' characteristics (n=1885)

Variable	Mean ± SD
Age (years)	53.5 ± 12.5
Gender	%
Male	55.6
Female	44.4
Diabetes Mellitus Type	%
Type 1	7.2
Type 2	92.8
Access to Ramadan-specific diabetes education	%
Yes	59.5
No	40.5
Baseline anti-diabetic therapy	%
Oral anti-diabetic drugs*	87.8
Insulin*	36.3
GLP-1 receptor agonists	4.9

\* 24.5% of patients were on OADs and Insulin

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Figure 2: Anti-diabetic medications/ doses change for Ramadan

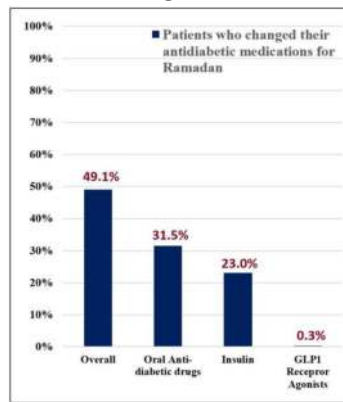


Figure 3: Patients fasting during Ramadan

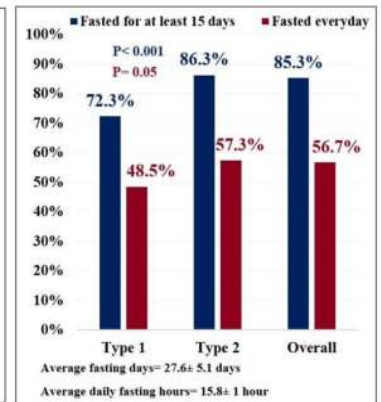


Table 2: Rates of confirmed hypoglycemia

Duration	Before Ramadan	During Ramadan	P value
Symptomatic Confirmed Hypoglycemia* (event/patient/month)	0.17	0.27	0.001
Severe Hypoglycemia** (event/patient/month)	0.01	0.2	0.207

\* Confirmed by blood glucose < 70 mg/dL.

\*\* Assistance was required as the patient could not treat her/himself due to acute neurological impairment directly resulting from hypoglycemia.

## Discussion

With a growing population of Muslim diabetic patients who fast during Ramadan, better understanding of patients' characteristics and physicians' real-life practices is essential to enhance fasting safety. The Ramadan study is the first prospective cohort study from 10 countries looking into these parameters. In accordance with the literature<sup>3,6</sup>, the Ramadan study showed that a relatively large proportion of Type 1 and Type 2 patients fast during Ramadan for a minimum of 15 days (72.3% and 86.3% respectively) and almost half of the population fast every day during Ramadan. The prescribed medications/doses for less than half of the population were changed for Ramadan. The rate of confirmed hypoglycemia during Ramadan was significantly higher than that before Ramadan while no significant difference was found regarding severe hypoglycemia to the contrary to what was observed in the EPIDIAR study<sup>6</sup>.

Additional research in this area is required especially for people with Type 1 diabetes in order to inform evidence-based clinical practice and ensure safety of diabetic patients who fast during Ramadan.

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