

Awareness among the Muslim diabetic patients about the fasting in Ramadan

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Objective: To evaluate the awareness among the Muslim diabetic patients regarding the fasting in the month of Ramadan.

Methodology: This descriptive cross sectional study was conducted on 312 Muslim diabetic patients of either gender, aged 18 years or above from July 2019 to January 2020 at OPD of NIDE, DUHS. Demographical and clinical data were included. A validated questionnaire comprising of 15 questions was used in face-to-face interview.

Results: A total 312 Muslim diabetic patients were included in this study. The lack of awareness was found in areas about the 'Pre-Ramadan Physician consultation, as 189 (60.6%) never consulted any physician before Ramadan. Misconception about the skipping dose of insulin and oral glucose lowering agents at sehri (due to the fear of hypoglycemia) were

seen in 179 (57.4%) and 200 (64%), respectively. Majority (n = 180, 57.7%) were not clear in their minds about the physical activity during Ramadan. A noticeable number of patients (n = 184, 59%) patients did not have knowledge about the blood glucose levels at which one should break the fast. Satisfactory awareness about needle prick during fast were seen in 68.3%, to take correct dose of insulin injection and oral glucose lowering agents after iftar in 51% and 57.1%, respectively. Right concepts about diet were found in 93.3 and 95.2% during sehri and iftar, respectively.

Conclusion: We found lack of awareness and misconception among Muslim diabetic patients about the fasting in Ramadan.

Keywords: Awareness, diabetes mellitus, fasting, muslim, Ramadan.

INTRODUCTION

Currently one fourth of the world population (around 1.6 billion people) is following Islam and it is growing with every passing day.¹ It is estimated that the Muslim population will become 2.2 billion by the end of 2030.^{1,2} For Muslims, Ramadan fasting from dawn to sunset is one of the most important religious obligations. In the state of fasting, Muslims have to abstain from any type of food, liquids, smoking and even medicine.³ Quran provides ease to travelers and ill people.⁴

The last population based epidemiological study (EPIDAR) on 12,243 patients from 13 Islamic countries found that during Ramadan 42.8% of patients with type-1 diabetes and 78.7% with type-2 diabetes fasted.⁵ Although complications including hyperglycemia, hypoglycemia, dehydration, fluctuation in the blood glucose levels, changing in the renal function and lipid metabolism can occur.⁶

The International Diabetes Federation (IDF) and Diabetes and Ramadan International Alliance (DAR) have developed comprehensive guidelines for diabetes patients intending to fast during Ramadan.⁷ The pre-Ramadan evaluation must include evaluation for any risks, develop a patient-specific medication adjustment

plan and educate the patient about self-management.⁸ Different countries have developed their own guidelines for diabetes patients who intend to fast during Ramadan.⁹ The aim of this study was to evaluate the awareness among the Muslim diabetic patients regarding the fasting in the month of Ramadan.

METHODOLOGY

This descriptive cross sectional interview based study was conducted on 312 Muslim diabetic from July 2019 to January 2020 at outpatient department of NIDE, DUHS. Patients of either gender, aged 18 years and above, including both T1DM and T2DM patients, except the comorbidities, were included in the study. Using Open Epi sample size calculator using proportion of correct classification of diabetes awareness = 71.75 taken from the study "Ramadan Fasting related Awareness, Practices and Experiences of a representative group of Urban Pakistani Diabetics" with 5% margin of error, the required sample size for this study was 312. We used non-probability convenient sampling technique. A written informed consent was taken from all participants.

Sociodemographic and the clinical data including age,

gender, marital status, education, duration of diabetes and type of therapy were collected. A validated preformed questionnaire was used in face to face interview. The questionnaire comprises of 15 simple questions about dietary habits, exercise, medication (oral glycemic & insulin), pre-Ramadan consultation (Physicians visits), self-management of glucose and hypoglycemia during Ramadan. Points will be given for all correct answers as per ADA guidelines for Ramadan and no point for incorrect answer. Total score was summed-up for diabetic awareness score of each subject with diabetes. A score > 50% rated as 'Satisfactory' and < 50% will be rated as 'unsatisfactory' awareness score.¹⁰

Statistical Analysis: SPSS version 27 was used for analysis of data.

RESULTS

Out of 312 patients, 150 (48.1%) were male and 162 (51.9%) females. Mean age was 49.84 ± 10.83 years (range 22 – 75). Mean duration and type of diabetes are shown in Table 1.

The frequencies of correct and incorrect answers are shown in Table 2. The lack of awareness was found about the Pre-Ramadan Physician consultation in 189 (60.6%) individuals, misconception about the skipping dose of insulin and oral glucose lowering agents at sehri (due to the fear of hypoglycemia) was seen in 179 (57.4%) and 200 (64%), respectively (Table 2). A noticeable number of patients (n = 184, 59%) did not

DISCUSSION

The overall awareness score of this study was not unsatisfactory, which might be due to the study sample, which was retrieved from an urban tertiary set-up, used to conduct pre-Ramadan diabetic awareness programs for the patients. The outcome of the study is similar to other studies.¹¹⁻¹³ However Quran ease the ill people to fast,⁴ but despite of this relief, most Muslim diabetic patients wish to fast in Ramadan. We found that 61% patients did not to consult physician for the structural education prior to the month of Ramadan. This is similar to several studies.¹⁴⁻¹⁶

The misconception about taking insulin injection and oral glucose lowering medicine at sehri was 57.4% and 64%, respectively. The main reason behind this was the fear of being hypoglycemic during fast, so the patients skipped their dose at sehri. These results correspond to previous studies.^{17,18}

The physicians could play a vital role in counseling the patients about the dose adjustment and misconceptions about Ramadan fasting.¹⁹ Physical activity during

have the knowledge about the blood glucose levels at which one should break the fast. Mean percentage of correct answers was 64.9 and mean awareness score was 9.74 ± 2.408 .

Table 1: Characteristics of study population.

Variables	Frequency (%)	Mean \pm SD (Range)
Age	--	49.84 \pm 10.84 (22-75)
Gender	Female = 162 (52%) Male = 150 (48%)	
Marital Status	Married = 295 (94.6%) Unmarried = 17 (5.4%)	
Occupation	Unemployed = 183 (58.7%) Employed = 129 (41.3%)	
Type of Diabetes	Type 1 = 24 (7.7%) Type 2 = 288 (92.3%)	
Disease Duration	--	7.148 \pm 6.13 (0.6-35)

Ramadan is a great debate in Muslim diabetic patients while fasting. Studies showed that 53.77%,⁸ and 81%²⁰ were uncertain and unaware about the physical activity during Ramadan. Our study showed that false perception of 'resumption of normal physical activity only after iftar' was 58%.

It is the responsibility of the diabetologists to guide the patients before the Ramadan in detail, about the physical activities and taraweeh prayers.¹⁵ ADA Ramadan guidelines say that patient can maintain their normal routine daily activity. Heavy and intense exercise should be avoided especially in T₁DM or patients taking insulin because of hypoglycemia.

Awareness about to 'break the fast at the sugar levels becomes 60mg/dl' were absent in 59% diabetic patients surveyed in our study. Ahmedani et al²¹ reported 47% unawareness. Blood glucose should be especially checked at time of feeling hypoglycemia or any acute illness occur.^{2,7,22} It is recommended that fast should end if blood sugar is < 70 mg/dl (3.9 mol/L) or > 300 mg/dl (16.7m.mol/L).^{13,23}

Table 2: Ramadan Fasting Awareness in Muslim Diabetic Patient

Questions	Correct	Incorrect	Correct %	Incorrect %
Do you believe that needle prick for testing your blood sugar levels is not allowed while fasting?	213	99	68.3%	31.7%
Can you still fast when you are taking insulin injection to control your blood sugar?	219	93	70.2%	29.8%
Should the Adolescents with type I diabetes fast?	271	41	86.9%	13.1%
Have you consulted your Physician before Ramadan to take advice about fasting?	123	189	39.4%	60.6%
Insulin injections should not be taken in sehri a sit can cause low blood sugar during fasting?	133	179	42.6%	57.4%
No oral medicine for diabetes should be taken at sehri?	112	200	35.9%	64.1%
Double dose of insulin injection for diabetes should be taken after Iftar?	159	153	51.0%	49.0%
Double dose of medicines for diabetes should be taken after Iftar?	178	134	57.1%	42.9%
If diabetics are fasting during Ramadan, they can take as many sweets and fried items as other (non-diabetic) family members are taking?	299	13	95.8%	4.2%
Do you continue normal physical activity while you are fasting?	243	69	77.9%	22.1%
Normal physical activity should be resumed only after iftar?	132	180	42.3%	57.7%
After the month of Ramadan ends, should you go back to your pre-Ramadan drug schedule?	241	71	77.2%	22.8%
Do you think that eating of extrafood in Sehri would have better control of blood sugar levels throughout the day?	291	21	93.3%	6.7%
Should you take extrafood in iftar to compensate for the low blood sugar during fasting?	297	15	95.2%	4.8%
If in the morning your sugar level becomes 60 – 70 gm/dl, should you break the fast before time?	128	184	41.0%	59.0%
Mean	202.6	109.4	64.9%	35.1%

We found that patients showed positive gratitude towards the concept of the needle prick and the dietary habits during the Ramadan. In pre-Ramadan structural educational programs, dietary plans for Ramadan should be discussed and the relation between the needle prick to breaking the fast should be clarified through the religious scholars. This study is not out of limitations as

it was conducted with a small sample size. The data about receiving any pre-Ramadan education were also not collected in this survey.

CONCLUSION

We found lack of awareness and misconception among Muslim diabetic patients about the fasting in Ramadan.

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