

Type 1 Diabetes and Ramadan Fasting: A Narrative Review

Rahim Vakili^{1*}, Zinab Niazi², Peyman Rezaie³

1. Professor of Pediatric Endocrinology and Metabolism, Mashhad University of medical Sciences, Mashhad Iran

2. Expert of Medical Education Faculty of Medicine, Mashhad University of Medical Sciences, Iran

3. Biochemistry and Nutrition Research Center, School of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

ARTICLE INFO	ABSTRACT
<p><i>Article type:</i> Review article</p> <hr/> <p><i>Article History:</i> Received: 8 Dec 2015 Accepted: 9 Feb 2016 Published: 20 Feb 2016</p> <hr/> <p><i>Keywords:</i> Diabetic patients Ramadan fasting Type 1 diabetes</p>	<p>Ramadan fasting is an important pillars of Islam .although patients and children expected from fasting during Ramadan, but every diabetic adolescents intends to fast should consult his diabetes management time, and intensive monitoring of blood glucose and urine ketones .close observation by endocrinologist, and weekly follow- up and highly individualized planning for each diabetic person is essential. In this Article we described general role that should be considered by type 1 diabetic people if they want to be fast during Ramadan.</p>

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Introduction

Ramadan is the name of 9th month of Islamic calendar and its mean scorching heat or dryness. According Islamic teachings, Muslim believed that Holy Quran was sent down from heaven in this month. Fasting during this month is obligatory for all healthy adult Muslim so (1). According different branches of Islam adolescent girls from 12.5 years old and adolescent boys from 15 years old should be fasted during Ramadan (2). Although some religious expert recommended it for girls over 9 years (3). During fasting in Ramadan Muslim abstain from eating, drinking, smoking, taking oral medication and Sexual activity. As a general role patient's, children, travelers, excepted from fasting but many of them interested to be fast during this month, as possible, as they do it.

Diabetes is a set of metabolic diseases in which there are high blood sugar levels throughout a prolonged period (4, 5). Severe complications comprise diabetic ketoacidosis and nonketotic

hyperosmolar coma. Moreover, serious long-term complications include cardiovascular disease, stroke, foot ulcers and damage to the eyes (6, 7). Type 1 diabetes mellitus is considered by loss of the insulin-producing beta cells of the islets of Langerhans in the pancreas that causes insulin deficiency. This type can be categorized as immune-mediated or idiopathic (8, 9).

Adolescent with diabetes usually need to frequent Blood glucose checking and frequent feeding during day and night, so they excepted from Ramadan fasting. In Past few years we frequently asked by him: I want to be fast during Ramadan, Please say to me what can I do. In this Article we described general role that should be considered by type 1 diabetic people if they want to be fast during Ramadan.

Type 1 Diabetes and Ramadan

Ramadan fasting not only alter the daily meal time ,but also change the daily activities, sleep

* Corresponding author: Rahim Vakili, Department of pediatric Endocrinology and Metabolism, Mashhad University of medical Sciences, Mashhad Iran. Email: vakilir@mums.ac.ir

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time, and percentage of carbohydrate in daily calorie intake. This changes highly different from person to person and for this reason the American Diabetic Association workgroup suggested that care of the fasting diabetic must be highly individualized (10).

Diabetic person that want to be fast during Ramadan highly needed to achieve complete skills and knowledge for control of blood glucose. This education should be started before fasting, frequent blood glucose monitoring, and equipment for the check of ketones in serum or urine is essential. Any medical conditions that maybe interfere with blood glucose control, such as infection, or dental caries, should be treated before fasting. As a general Role uneducated patients, limited access to medical center and diabetes team, patients with frequent hypoglycemic attack and brittle diabetes should be avoided Ramadan fasting.

Although naturally fasted person during Ramadan want to more carbohydrate consumption, a healthy balanced diet should be maintained. The main worry about Ramadan fasting and diabetes is hypoglycemia, and its risk may increase with twice - daily (NPH and regular insulin) regime (11).

Basal bolus Insulin may be with lower risk for Hypoglycemic attack during Ramadan fasting. One injection of glargine insulin with pre-meal rapid - acting insulin may be used. Ramadan fasting may be broken when hypoglycemic Sign and symptom observed. In regular basal bolus insulin therapy in diabetic adolescence 40- 50 % of total daily dose consider as basal insulin but the percent basal insulin may be increased up to 70 percent of total daily need in Ramadan fasting. Several study with different insulin therapy regimens have been down in Islamic country in past few years. There is significant different in hypoglycemic attack, need to hospitalization, and broken fasting observed.

Azar and coworker in open-label study report Ramadan fasting in 9 individual that received 70 % of pre-Ramadan total daily dose (60 % as based in evening and 40 % as bolus before two main meals). They report 2 broke fasting due to hypoglycemia, and no episode of sever hypoglycemia or ketoacidosis and need to hospitalization(12). Zabeen et al report results of perspective observational study in 33

Children over 11 who want to be fast in Ramadan. 60.6 % of them could complete their fasting (13).

Khalil and coworker studied effect of Insulin pump and continuous glucose monitoring in 21 cases with type one diabetes. They report no different in total daily dose of Insulin before and during fasting in Ramadan but there was a redistribution of Insulin over a 24-h period in relation to the Changes in the daily lifestyle and eating patterns. They decrease the daytime basal by 5-20% and increased it during the nighttime. The bolus dose before two main eat time increased (14). Kadiri and coworker compare the effect between regular insulin with insulin lispro before sunset meal in Ramadan and report significantly Better effect of Insulin lispro (15).

Conclusion

Adolescents with Type 1 diabetes can fast during Ramadan with close Follow-up complete education about diabetes controls and adequate technical and equipment support.

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