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Interest of the therapeutic education in patients with type 2 diabetes observing the fast of Ramadan

Henda Jamoussi, Rym Ben Othman *, Salma Chaabouni, Amel Gamoudi, Olfa Berriche, Feten Mahjoub, Imen Sebai, Chiraz Amrouche

National Institute of Nutrition, Department A, Tunis, Tunisia

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Abstract The fast of Ramadan is a dilemma for diabetic patients due to the complexity of the management of diabetes during this holy month and the multiple risks they face (hypoglycemia, etc.).

Objectives: Evaluate the impact of a structured protocol of therapeutic education in a sample of type 2 diabetes, who were authorized by their doctors to fast, on metabolic and anthropometric profiles.

Methods: This prospective study was conducted among 54 type 2 diabetic patients (28 men and 26 women) aged 36–65 years, recruited from National Nutrition Institute. Patients were divided into two groups: the first group ($n = 26$) received an education session one to two weeks before the month of Ramadan; the second group ($n = 28$) did not have appropriate therapeutic education except therapeutic adjustments. All our diabetic patients benefited from anthropometric measurements, determination of body composition and metabolic assessment (HbA1c, cholesterol, triglycerides, etc.) before and after the month of Ramadan.

Results: The fast was completed without complications in 25 diabetic patients educated group and 22 control patients.

We found that weight loss was greater among educated diabetic patients (-1.05 kg) than in controls (-0.58 kg), but without statistical significance. Body composition has not undergone significant changes in both diabetic groups.

Therapeutic education has led to a decline of 0.27% in HbA1c in the educated group while glycemic control in diabetic patients uneducated remained stable. Furthermore, we observed a better lipid profile in diabetic patients educated than those who did not have education.

Conclusion: Our results justify the interest of patient education centered on the month of Ramadan in all type 2 diabetic patients observing the fast of the holy month. This education should be continued during Ramadan in order to fulfill this religious rite safely.

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* Corresponding author at: 15 rue jbel lakkhdher, Tunis, Tunisia. Tel.: +216 52262806.

E-mail address: benothman@gmail.com (R. Ben Othman).

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1. Introduction

Fasting during Ramadan is one of the five pillars of Islam. It is mandatory for all adult Muslims in good health. Diabetic patients who fast are exposed to several risks related on the one hand to the period of fasting and on the other to changes of rhythm and eating habits that characterize the month of Ramadan i.e. the consumption of meals rich in saturated fats and carbohydrates with high glycemic index.¹ Despite the ban on the practice of fasting by their doctors, some diabetic patients insist to fast. According to the study “EPIDIAR”², conducted in 2003 in 13 Islamic countries, 79% of type 2 diabetic patients observe the fast of Ramadan. So in order to prevent or reduce the risk of complications in diabetic patients who fast, recommendations have been drawn^{1,3,4} and it shows that therapeutic education focused on the month of Ramadan, including dietary adjustments and while insisting on glycemic self-monitoring is crucial. These observations led to carry out this study, whose main objective is to assess the effectiveness of a structured therapeutic education protocol before the month of Ramadan with a sample of type 2 diabetic patients, identified as low or medium risk of complications, which were allowed to fast.

2. Methods

This is a prospective study which involved 54 type 2 diabetic patients, recruited two weeks before Ramadan at the service “A” of the Tunis National Institute of Nutrition, which have been authorized by their doctors to fast the month of Ramadan. In 2013, this month took place from July 9 to August 7. All patients were treated with ADO (oral antidiabetics) and had an HbA1c \leq 9% (glycosylated hemoglobin). Patients who have experienced severe hypoglycemia in the three months preceding the month of Ramadan or with macrovascular complications including ischemic heart disease, renal impairment and pregnant and lactating women were excluded from the

study. The recruited patients were divided into two groups (Fig. 1).

The objective of this education was to enable patients to acquire knowledge and self-care skills to better manage their disease during the month of Ramadan, namely:

- Ensure a balanced food intake in both qualitative and quantitative terms (limiting fatty and fried foods and products with high glycemic index).
- Prevent dehydration by ensuring adequate fluid intake during periods of non-fasting.
- Recognize the clinical manifestations of hypoglycemia, hyperglycemia and learn what to do when they occurred.
- Ensure proper therapeutic compliance by following adaptations of treatment established by the physician.

Emphasize the importance of SMBG, particularly during the period of fasting, for screening hypoglycemia (< 0.7 g/l) and hyperglycemia (> 3 g/l) which are indications to interrupt fasting.

All patients underwent a search of degenerative complications and anthropometric measures including the calculation of body mass index (BMI) and the measure of fat mass by impedance and a complete lipid and glycemic assessment. These measurements were performed fifteen days to a month before Ramadan (t1) and were done one or two weeks after the end of the holy month (t2). Statistical analyzes were performed using EPI INFO software using the chi-square test (χ^2) for the comparison of qualitative variables. As for the comparison of means, it is based on the Student’s *t*-test or Kruskal–Wallis if the conditions are required. A difference is considered statistically significant if the *p* value is less than 0.05.

3. Results

The general characteristics of the population are summarized in Table 1, and both groups were fair for the different parameters with a *p* value that was not significant.

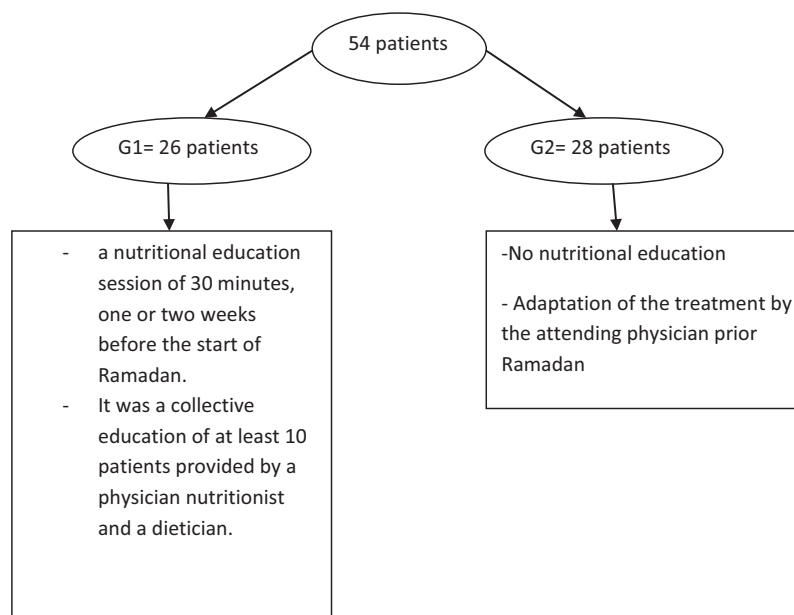


Figure 1 Design of the study.

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