

Experience of a recreational diabetic day by a non-governmental organisation, T1 Diams, in Mauritius

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Background: T1 Diams, a non-profit organisation on the island of Mauritius, has been working on the implementation of therapeutic and educational activities for its members. It regularly organises a recreational diabetic day ('Enjoy life' or 'T1 Diams en Balade').

Aim: To give an overview of a typical diabetic recreational day.

Methods: The author participated in several of these activities organised by the organisation in 2014 and 2015.

Results: A total of 22 patients came to the event; 11 (≥ 12 years old) attended for the day. The morning session was dedicated to diabetic therapeutic education and was carried out by two diabetes nurses. During the afternoon session there were physical activities for those > 12 years old and low-intensity activities for the other group. The menu for lunch was devised by a nutritionist. Blood glucose levels were regularly monitored. The patients did their own insulin injections.

Conclusion: This recreational diabetic day gives an opportunity for parents to be reassured that their diabetic children can be autonomous. The day was carried out in a professional way so as to empower the patients. These activities should be organised regularly during the year.

Keywords: diabetic recreation day, diabetic therapeutic education, T1 Diams, Type 1 diabetes

Introduction

Type 1 diabetes usually affects children and young adults. It is a chronic disease, whereby insulin producing cells (β cells) in the pancreas are auto-destroyed.¹ Hence, the treatment of this condition is challenging and lifelong, and has to be properly managed.

Patients are not correctly and fully informed about their disease, and few have been able to cope with their chronic condition alone. Doctors might be highly qualified at diagnosing and treating diseases, but, they unfortunately fail to allocate sufficient time to educate their patients on their disease.²

The World Health Organization (1998) has noted that the quality of treatment is not to the expected level despite we are doing therapeutic education effectively.² Moreover, nonadherence rates for chronic illness regimens and for lifestyle changes have been at about 50% for many years.³

Importance of therapeutic patient education (TPE) for type 1 diabetes

Therapeutic patient education is important for type 1 diabetic patients, in order to allow them to develop the appropriate skills for self-managing and coping with their chronic condition. If they become autonomous, such patients will be able to avoid the complications of diabetes, while maintaining a good quality of life. Globally, this will reduce the cost of long-term care of type 1 diabetes in society.²

Methods

The author was invited to participate in several activities organised by the T1 Diams organisation in 2014 and 2015. He placed himself in the shoes of a type 1 diabetic patient and

took part in all the activities organised for him and the other type 1 diabetic patients. Clearance was granted by the managing committee of the organisation. In this observational study, the author presents one typical diabetic recreational day.

Results

Role of T1 Diams in type 1 diabetes therapeutic education

T1 Diams is a Mauritian non-profit organisation, which was founded in 2005 with the aim of the caring and self-management of type 1 diabetes on the island. Its first therapeutic education programme was held in Mauritius, with the collaboration of the Children's Hospital (Reunion Island) with only eight type 1 diabetic patients. It has now reached 241 patients. For the past 10 years, T1 Diams has been effectively developing and executing diabetic therapeutic education.

It achieves its goals through four types of therapeutic educational interventions:

- (1) regular home-based diabetes therapeutic education;
- (2) regular diabetic recreation days;
- (3) annual winter diabetic camp;
- (4) quarterly news bulletin on type 1 diabetes and an annual national congress on type 1 diabetes for health professionals.

Diabetic recreation day ('T1 Diams en Balade' and 'Enjoy Life')

The idea of having centres where diabetics can be trained and treated on an outpatient basis is by no means a new concept.⁴ T1

Diams regularly organises a monthly recreational diabetic day for its patients: 'Enjoy Life' or 'T1 Diams en Balade'. These two activities equate closely to diabetic day care centre in a hospital. In Mauritius these occur outside hospital and are organised by T1 Diams.

'Enjoy Life' is a recreation day, whereby the members are invited for a whole day from 07h30 to 16h00, and where breakfast is included. On the other hand, 'T1 Diams en Balade' starts at 09h00 and ends at 16h00, and breakfasts are not provided. Since T1 Diams has members all over the island, it has to divide the island into two parts, north and south. Each recreation day may thus have a group of either northern or southern residents, and each time a theme is proposed for therapeutic education. This is illustrated in Table 1. The idea of organising the activity at the two poles of the island is that people of low socio-economic status or those who have a busy schedule and cannot always attend have the opportunity to catch up.

The planning of the day is determined well in advance as illustrated in Table 2. About 40 patients normally attend and they are divided into three groups, each taken up by the two diabetes educators and a general practitioner.

The morning session, 09h00 to 11h00, is allocated to diabetic therapeutic education. Various educational tools are used (written documents, slides, Internet, etc.). In the afternoon session, physical activities are organised. Specialised doctors are also invited to make a presentation on a specific subject. These diabetic recreation days give an opportunity for parents to be assured that their diabetic children can be autonomous. The day is carried out in a professional way so as to empower the patients. These activities should be organised regularly during the year, to allow experience-sharing.

Table 1: Themes to be covered on a monthly basis

Month (2014)	Region		Theme
January	North	T1 Diams en balade	Management of hyperglycemia
February	South	T 1 Diams en balade	Management of hyperglycaemia
March	North	Enjoy Life	Insulin and adaptation
April	South	Enjoy Life	Insulin and adaptation
May	North	T1 Diams en balade	Nutrition
June	South	T1 Diams en Balade	Nutrition
July		Annual winter diabetic camp	
August			
September	North	T1 Diams en Balade	Brief general description of the digestive system/what is Type 1 diabetes
October	South	T1 Diams en Balade	Brief general description of the digestive system/what is Type 1 diabetes
November	North	Enjoy Life	Management of hypoglycaemia
December	South	Enjoy Life	Management of hypoglycaemia

The author describes one recreational diabetic day that he attended during the study.

Observations

For the *Enjoy Life* day that took place in the north of the island, 22 type 1 diabetic patients attended the event. The activity was organised on the recreation ground of a well-known sugar estate in Mauritius. Prior to the event, the staff of T1 Diams send a letter of invitation to all 241 members. Two days before the event the staff call the members to confirm their intention to be present and their pick-up point. Each member has a pick-up point where the transport will collect them and bring them to the recreation site. Once the number of confirmed patients is known, the administration organises the number of vehicles needed to transport the patients from different places on the island. Each vehicle will have a medical personnel member present. The latter will have glucose and bread available in case of hypoglycaemia. One week before the event, a nutritionist will meet the administrator and the medical personnel to brief them on the menu for the day as regards carbohydrate counting. The administrator will then organise the buying of ingredients and preparation of the menu.

T1 Diams called the author to tell him the place and time for the pick-up point. He was told that the vehicle would collect him at 06h30. Once in the transport he presented himself to the patients and told them to inform him if at any point they were not feeling well. After picking up five members the transport reached the site at 07h15. There was a reception desk where the author registered and was given a bottle of water for the day. There were a total of 11 patients \geq 12 years and 11 patients less than 12 years. After that the author went to the medical room where he checked his blood glucose levels like all the patients and wrote down the result in a blood glucose logbook. The other patients carried out the same procedure and did their injection of insulin before their breakfast. Children with hyperglycaemia were allowed to inject insulin beforehand, and those with hypoglycaemia were allowed to have their injection just before breakfast. An injection time glycaemia table was followed, as shown in Table 3.

Table 2: Planning of the diabetic recreational day

	T1 Diams en Balade	Enjoy Life
07h30–07h40		Arrival and registration of members
07h40–08h00		Glycaemia, insulin injection
08h00–09h00		Breakfast
09h00–09h10	Arrival and registration of members	Presentation of the programme
09h10–09h20	Glycaemia	
09h20–09h30	Snack	
09h30–09h45	Presentation of programme	
10h00–11h45	Diabetic therapeutic education	Diabetic therapeutic education
11h45–12h00	Glycaemia, insulin injection	Glycaemia, insulin injection
12h00–13h00	Lunch	Lunch
13h00–13h30	Free zone	Free zone
13h30–15h30	Physical activities	Physical activities
15h30–16h00	Glycaemia	Glycaemia
16h00	Departure	Departure

Table 3: Glycaemia level and injection time

Glycaemia (mmol/l)	Time of injection before breakfast/lunch
< 3.3	Sugar and then injection just before
3.3–8.2	4 min
8.3–11	10 min
11.1–16.5	10–15 min
16.5–22	15–20 min

Nutrition

The nutritionist counselled the patients on the amount and importance of each food group. There was a variety of items for breakfast for the patient to choose from. For example, 1 egg (1 tablespoon sliced mushroom/¼ tomato, herbs), 1 x round wholemeal bread (100 g), butter, normal jam—1 tablespoon, peanut butter, cheese, chocolate cereals, semi-skimmed milk—200 ml, tea, coffee and sugar. For lunch attendees received 100 g wholemeal bread, 3 x chicken nuggets, 1 x boiled egg, 1 slice fat-reduced cheese and salad (lettuce, cucumber and beetroot).

After breakfast there was a session of 45 min at which all the invitees presented themselves and were briefed on the programme. That day the theme was 'Brief general description of the digestive system/what is type 1 diabetes'. The group was divided into two (under 11 years and over 12 years) and a diabetic educator was responsible for each group. For the younger age group the therapeutic session was organised in language simple enough to be understood by the children. For the other group 'the path of bread in the body' was used. The site was divided into several paths representing the different parts of the body (mouth, oesophagus, stomach, pancreas, insulin, liver, muscle, and intestine and glucose molecules). Everyone followed the path of the 'bread' by walking through different checkpoints representing an organ. The educator was the maestro for this mini-trip. Parents and adolescents were allowed to ask questions along the way.

Specialised session

An optometrist attended the recreation day and did a lively presentation on diabetes and its complications concerning the eyes.

Physical activity

After lunch physical activity was organised. The insulin dose was adjusted prior to the activity using a well-established protocol. No injection was done in the lower limb as there was a risk of hypoglycaemia during the activity. Furthermore anyone with hyperglycaemia above 14 mmol/l associated with ketones in the urine was not allowed to participate. Instead, the ketotic state was treated with a bolus of rapid-acting insulin. The aim of organising this session is to empower the members how to manage their type 1 diabetes with sport.

Management of recreation day diabetes-related emergencies

Hypoglycaemia

A protocol for hypoglycaemia treatment is available in the medical room. Hypoglycaemia is defined as a blood glucose level ≤ 3.3 mmol/l (0.6 g/l). After 5 g of oral glucose per 20 kg of body weight is given there is a wait of 10 min for any symptoms to subside. Should hypoglycaemia persist, the oral glucose dose

is repeated. In the case of severe hypoglycaemia, the medical staff are trained in the administration of 30% glucose intravenous solution or intramuscular injection of glucagon.

Prior to physical activity, the dose of insulin is decreased and a 10 g glucose-equivalent snack is given.

Hyperglycaemia

In the presence of blood glucose readings ≥ 14 mmol/l, the child is requested to do a urine ketone level test. There is a set protocol for the management of hyperglycaemia with or without ketosis. For hyperglycaemia without ketosis, the amount of insulin needed is calculated to correct the elevated blood glucose reading (1 unit of rapid-acting insulin = 99/(total dose of insulin over 24 h)). In the presence of ketosis, the child is given water to prevent dehydration and a calculated amount of insulin is given to reverse the ketosis. No physical activity is allowed during that period. The child's condition is followed up using a flow sheet. If the symptoms persist, the child is referred to the nearby regional hospital.

Conclusion

Regular recreational diabetic days are important to implement diabetic therapeutic education, as well as to reinforce experience-sharing among type 1 diabetic children in Mauritius. It is one of the rare countries in the world endeavouring so much to help type 1 patients and their families.

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