

How Self Management Therapy Can Improve Quality of Life for Diabetic Patients

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Abstract. Self-control led therapy is vital in the treatment of insulin dependent diabetes mellitus (IDDM), allowing as it does, correct insulin therapy, a reduction in hospitalisation and modification of therapy for individual needs in relation to various factors. Undoubtedly it is the responsibility of the diabetes team (doctors, nurses, dietician, psychologist and social assistant) to instruct the patient and help him/her in this new situation. The patient must learn to live and develop normally, participating to the full in school, at work and in all social situations, by fully understanding how to manage the illness autonomously and how to prevent short and long-term complications. Thus, the team must set objectives: making the patient aware of his condition, giving him the knowledge of what to do and how to do it. In this way, quality of life can be improved for patients affected by this chronic illness and they can understand how to face the future with realistic optimism. Modern technology has brought many novelties into the diabetes field, such as the ever smaller and more accurate glucose meters, or finger-prick devices requiring minimal quantities of blood. They represent another step towards a less invasive or disruptive approach in the management of diabetes. Non-specialist press articles may raise false hopes, above all about new research in the field of diabetes, but at least they also raise awareness on a problem of national interest, i.e. insulin dependent diabetes mellitus.

Key words: Quality of life, self control, self management, insulin dependent diabetes mellitus

It is well known that diabetic patients must learn many things so as to practice what is needed to self-manage this chronic illness (1). However traditional instruction models have not been of much help in instructing diabetic patients in how to lead a healthy life with some proper behavioural adjustments (2). Learning life-style changes is a complex process which requires evaluation, planning and activation with verification of both mechanisms and results (3). Thus teaching, education and learning take on a particular meaning when talking about diabetic patients and their families, and an improvement in quality of life.

Instructing young patients and their families on how to manage diabetes autonomously and how to re-establish a new balance of health is a fundamental objective of the diabetes team.

Discussion

Instructing young diabetic patients goes from a clear explanation of all the self-controlled home techniques to a demonstration of the correct use of aids in order to improve the quality of life. A diabetic patient who has the know-how is thus enabled to regain self-esteem and independence so as to accept his/her disorder; the team member not only needs to understand diabetes and its complications but he/she must also be able to tune in with the family he/she is dealing with, and keep in mind the patient's lifestyle. The instruction process is cyclic and is made up of four phases: evaluation, planning with defined objectives, activation and verification; only with careful analysis of the four phases, and with the help of a questionnaire, can

the aims which the team has set been reached. Self-management of diabetes, above all if a prime objective is achieving optimum metabolism, requires a guiding instruction plan both for the team and for the patient (3).

A self-control led therapy therefore represents a real change in the management of diabetes, and an improvement in quality of life. In the 1980's self-monitoring of blood glucose level, glucosuria and ketonuria was introduced, allowing doctors and patients to understand the evolvement of diabetes in everyday life, and adjust the therapy, if necessary. Self-control led therapy offers many advantages including:

- swift adjustment of insulin therapy;
- less time in hospital;
- adjustment of therapy to individual needs, which may vary depending on various factors (school, holiday, illness).

Achieving a good metabolic level and a better quality of life can be obtained through a balance of diet, physical exercise and insulin therapy, creating standards for the care of diabetic patients, such as (4, 5):

1. correct diet therapy;
2. constant self-monitoring of blood glucose level;
3. regular physical exercise;
4. models of physiological programs, suited to the patient;
5. instruction on the prevention and treatment of hypoglycemia;
6. continued instruction and compliance with treatment;
7. periodic revision of therapeutic objectives.

The aim of a good metabolic level (4) is to:

- (i) maintain glucose homeostasis as close as possible to the normal;
- (ii) avoid short-term and medium-term complications;
- (iii) permit regular growth;
- (iv) avoid long-term complications.

Treatment objectives should be tailor-made for each individual, and parameters to be taken into consideration include:

- A. daily blood glucose values;
- B. daily glucosuria and ketonuria values;
- C. HbA1c blood levels.

Children can usually be divided into groups of over or under 5 years of age, as objectives in the two groups may vary (Tab. 1 and 2):

With regard to daily blood glucose monitoring, i.e. how many checks to do and when to do them, it depends on the level of metabolic control required and the patient's particular needs (7).

Current thinking recommends 3-4 daily blood glucose checks as the "gold-standard".

With regard to glucosuria and ketonuria there is no doubt that at least three checks in the day should be performed, that is, on waking up, before lunch and before dinner so as to get useful information from different moments of the day.

It has been possible to measure ketonemia in capillary blood for over a year now. This application is particularly useful in the case of diabetic ketoacidosis, intercurrent illness, uncontrollable vomiting, prolonged fasting and pump (CSII) wearers (8, 9).

Finally, with regard to HbA1c this can be determined in day hospital in a very short time (6 minutes), both for diagnostic and therapeutic purposes.

Undoubtedly metabolic control has undergone great evolution in the past few years and has improved the quality of life in young diabetic patients, above all thanks to the introduction of self-controlled systems which have led to an improvement in self-management of the illness. This can be compared to the dis-

Table 1. Glycemic objectives in children <5 years of age

Blood glucose level mg/dl	Ideal	Realistic
Before meals	100-120	100-150
1 h after meal	150-180	180-200
2 h after meal	140-160	160-180
2 - 4 h after meal	100-120	120-140
HbA1c (%)	<7	<8

Table 2. Glycemic objectives in children >5 years of age

Blood glucose level mg/dl	Ideal	Realistic
Before meals	80-110	90-130
1 h after meal	100-160	100-180
2 h after meal	90-130	90-150
2-4 h after meal	80-120	80-120
HbA1c (%)	<7	<8

covery of insulin, when in the 1970's and 1980's, by the use of chromatometry blood glucose level and glucosuria levels could be measured, to the 1990's when capillary action began to be used for measuring blood glucose level, up to today with the use of telematic and continual blood glucose level readings.

It was this frantic research which led to the development of even more precise glucose meters which could work with lower quantities of blood, giving results in a few seconds and allowing memorisation of data. "Smaller and more discrete" devices which are similar to many common devices such as calculators, palm-tops or even mobiles have now appeared (10).

While glucose meters may have undergone notable changes in time, the same can not be said for finger-pricking devices as progress here has not been at the same level; unfortunately blood quantity levels are still too high and laser technology is still a remote possibility.

Comment

Due to the patients' uneasy coexistence with complex diabetic therapies, a lot of attention has been given to wider education programmes for the patient's self-management of diabetes in recent years, and these programmes are now among the most diffused.

Various behavioural strategies are used to help the patient find his identity within the group and solve his problems, helping him to talk as much as possible during meetings at the hospital, keeping in touch with him by phone or e-mail, deciding together the policy to adopt (11).

It is important to provide the patient with total assistance through good co-ordination among doctors, nurses, dieticians and psychoanalysts, thus providing a better quality of life, all working together to reach an ideal blood glucose level.

In conclusion, the acquisition of modern technology with a better understanding of the real situation, and with a closer relationship between paediatrician and the Centre may allow patients to look to the fu-

ture with growing trust and optimism, knowing that they can still enjoy a high quality of life.

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