

Knowledge and practices on childhood diabetes in Africa

Djibril Boiro¹, Amadou Sow^{*1}, Modou Gueye¹, Papa Moctar Faye², Babacar Niang², Aminata Mbaye², Dominique Larissa Antsue¹, Aliou Abdoulaye Ndongo¹, Aliou Thiongane², Ndeye Maimouna Ndour Mbaye³, Amadou Lamine Fall², and Ousmane Ndiaye²

¹Abass Ndao Hospital Center in Dakar

²Albert Royer National Children's Hospital of Dakar

³National Center for Diabetology Mark Sankale of Dakar

*Corresponding author:

Amadou SOW, Pediatrician, Cheikh Anta Diop University of Dakar

Submitted: 12 jun 2020; Accepted: 18 jun 2020; Published: 27 June 2020

Summary

Introduction: Type 1 diabetes is a chronic condition that has a serious impact on the quality of life of the child and his family. According to the International Diabetes Federation, in addition to insulin therapy, therapeutic education is fundamental to improve care and reduce complications. The purpose of the work was to assess practitioners' knowledge of therapeutic education, highlight bad practices, and make recommendations for improving child management.

Methodology: This was a prospective multicenter study investigating the non-insulin management of type 1 diabetic children in public health facilities in Dakar.

Results: We interviewed 92 providers. This was 43.5% (40) Pediatric DES; 46.7% (43) of Grade 7 students and 6.5% (6) of pediatricians. Of these, 64.1% (59) had no diabetes training. They advocated a restrictive diet in 35.9% (33) of cases, including 2.2% (2) of pediatricians; 15.2% (14) of DES; 2.2% (2) diabetes educators and 16.3% (15) 7th grade. According to providers, the main targets of therapeutic education were single parents in 7.6% of cases. Among the providers, 23% did not think it necessary to adapt the treatment according to sporting or recreational activities. Sport was prohibited according to 9% of providers and for 10% the presence of a psychologist is useless in the care.

Conclusion: Improving the quality of management of T1D requires continuous training of health care providers and the implementation of standardized protocols in the various health structures to avoid certain errors in the care.

Keywords: Diabetes, Children, Therapeutic Education, Providers

Introduction

Type 1 diabetes (T1D) is the most common endocrinopathy in children. It is a chronic pathology with serious repercussions both on the quality of life of the child and his family [1-3]. According to the international federation of diabetes in addition to insulin therapy, therapeutic education (TPE) is fundamental and constitutes the key to success in care [4]. The objective of this work was to assess the knowledge and attitudes of health professionals about nutritional care, the management of physical activities, therapeutic education and the importance of psychosocial support.

Methodology

This was a prospective, multicenter survey carried out from April 3 to May 10, 2018 in six level III hospital in the national health pyramid. These included: the Abass Ndao hospital center (ANHC),

a benchmark structure for the management of diabetes in Senegal, the Albert Royer national children's hospital center (CHNEAR), the pediatric services of the General Hospital of Grand Yoff (HOGGY), from Aristide Le Dantec Hospital (HALD), Main Hospital in Dakar and Pikine Hospital. The survey targeted in the various centers: pediatricians, students in pediatric specialization (DES of pediatrics), medical students in thesis year having already carried out internships interned in pediatric services and therapeutic educators for the diabetes. Claimants responded to a self-administered survey form after we presented and explained the purpose of the survey. The data was collected, entered and analyzed with the Epi info version 7 software.

Results

Out of 120 files distributed, we recovered 92 files, or 76.6%. Nearly

70% of the providers surveyed worked in the two main reference sites in the management of childhood diabetes: CHAN and CHNEAR. Pediatricians represented 6.5% (6) of providers. The distribution of claimants according to their qualification is illustrated in (Figure 1).

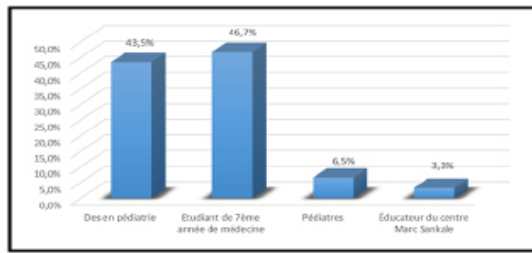


Figure 1 : Distribution of providers according to their qualification

The age of claimants was less than 30 years in 63% of the cases, 64.1% had never received any training in diabetology and 76.1% had less than 2 years of experience compared to the management of type 1 diabetes. According to 35.9% of providers, the diet of the diabetic child must be restrictive, including 2.2% of pediatricians, 15.2 % of DES, 2.2% of educators and 16.3% of students. The consumption of sugary foods was prohibited, according to 4.3% of providers. Among the providers 76.7% recommended at least, 3 daily meals and the reasons given are reported in (Table 1).

	Workforce	Percentage (%)
Do not know	13	14.1
Eating as a non-diabetic child	46	50
Avoid hypoglycaemia	21	22.8
Avoid snacking and hunger	4	4.3
Comply with insulin therapy and capillary glycemia	11	12
Facilitate the acceptance of treatment	3	3.3
Balance diabetes (better control glycemic figure)	5	5.4

Table 1: Motivation for the number of recommended meals according to the providers surveyed

The providers surveyed thought that the consumption of sweeteners was prohibited for 34.8% because not recommended for 8.7%; useless for 5.4% and identical to quick sugar in 5.4%. According to 2.5% of providers, the dose of insulin should be increased during sports activities; stop administration for 1.3%. For providers, the main targets for therapeutic education were children and parents for 89.1% and single parents for 7.6%. For all providers, therapeutic

education is a continuous and repeated process allowing better follow-up for 25%; a better understanding of the disease for 16.3% and good therapeutic compliance for 17.4% of the cases. For the majority of providers (95.7%) the presence of a psychologist is necessary to support the patient in the experience of his illness (89.1%); monitoring of school results for 55.4% and support for the family for 81.5%. The target of psychological care according to providers is shown in (Figure 2).

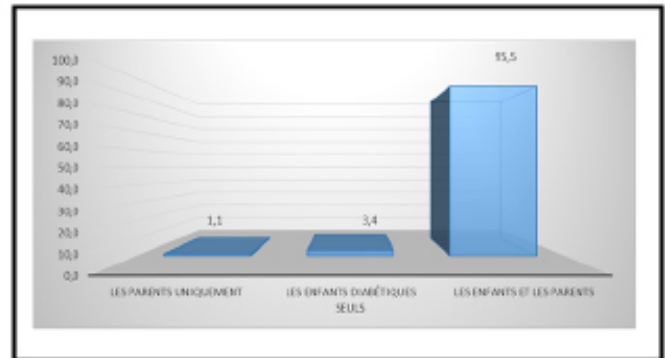


Figure 2: Target of psychological care according to providers

Discussion

The training deficit in type 1 diabetes in particular and in diabetology in general noted in our study is insufficient compared to a study carried out in the Ile de France in 64 structures which had reported that the providers had mainly undergone level 1 training (less than 50 hours) and 47.8%, level 2 training (100 hours or university degree) [2]. The restrictive diet recommended by 35.9% of providers does not comply with international guidelines, which recommend a healthy, and balanced diet as for the general population, because the restrictive diet in children is associated with risks of malnutrition, delay growth and development [5-9]. Regarding the number of meals, the majority of providers had attitudes consistent with the recommendations which are three balanced meals a day; this will provide all the essential nutrients, optimal growth, avoid bugs and provide a framework for regular monitoring of blood sugar levels [9, 1]. According to 38.6% of the providers surveyed, the consumption of so-called diabetic foods (foods sweetened with sweeteners) is prohibited because unnecessary and contain fast sugar. According to international nutritional guidelines, these foods are unnecessary, expensive, and high in fat and may contain nutritious sweeteners with laxative effects [5]. According to 2.5% of the providers surveyed, the dose of insulin should be increased during sports activities. On the contrary, in no case should the doses of insulin be increased, nor should the administration of insulin be stopped [1]. The recommended attitude is to adapt the doses of insulins by lowering them according to the duration and intensity of physical activity. According to the international recommendations of ISPAD, therapeutic education concerns the child, the parents as well as those around them [5, 6]. These recommendations are followed by providers. It must be early and continuous to allow empowerment for the child and the parents through the knowledge provided and the skills acquired [6, 7]. Children with diabetes have higher rates of depression and other emotional problems than the general population. The main psychological problems being depression, which affects 15-25%

of adolescents with type 1 diabetes, anxiety 13-17% and denial of illness [4]. The answers to this question for the majority of providers surveyed were consistent with the data in the literature.

Conclusion

Improving the quality of T1D care requires initial and continuous training of health professionals and the implementation of standardized protocols in the various health facilities to avoid certain errors in care.

Reference

1. ANA M (2017) Type 1 diabetes. <http://www.anam.ma/upload/document/ALD010.pdf>
2. Ducos J (2012) The therapeutic education offer for adult diabetics in Île-de-France. *Practices and Organization of Care* 43: 1-7.
3. International Diabetes Federation. IDF Diabetes Atlas. https://diabetesatlas.org/upload/resources/previous/files/8/IDF_DA_8e-EN-final.pdf
4. High Authority for Health (HAS). Therapeutic patient education. How to propose and realize it? https://www.hassante.fr/portail/upload/docs/application/pdf/etp_comment_la_proposer_et_la_realiser_-_recommandations_juin_2007.pdf Accessed February 10, 2018
5. Harry dorchy (2005) Management of children and adolescents with diabetes mellitus: Personal experience. *Rev Med Brux* 26: 247-254.
6. Lange K, Swift P, Pankowska E, Danne T (2014) Diabetes education in children and adolescents. *Pediatric Diabetes* 15: 77-85.
7. Nadia Tubiana-Rufi (2009) Therapeutic education of children and adolescents with chronic diseases. *Press med* 38: 1805-1811.
8. Ogle G, Middlehurst A, Silink M, Hanas R (2017) Paperback for the treatment of diabetic children and adolescents in resource-limited countries (French translation). 2nd Edition. Brussels: International Diabetes Federation 2017: 1-45.
9. Smart CE, Annan F, Bruno LPC, Higgins LA, Acerini CL (2014) Nutritional management in children and adolescents with diabetes. *Pediatric Diabetes* 15: 135-153.

Copyright: ©2020 Amadou SOW. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.