Iwona Chmiel-Perzyńska[1], Marek Derkacz[2], Ewelina Grywalska[3], Agnieszka Kowal[3], Janusz Schabowski[1], Andrzej Nowakowski[2]

ORIGINAL

[1]Chair and Department of Family Medicine, Medical University in Lublin, Poland, [2]Clinic of Endocrinology, Medical University in Lublin, Poland, [3]Students' Science Club at the Chair and Department of Family Medicine, Medical University in Lublin, Poland

The knowledge about hypoglycaemia among primary school teachers in the Lubelskie Province in Poland

Abstract

Background. Schoolchildren spend several hours at school every day, where they must take their insulin injections and are running the risk of hypoglycaemia. The level of teachers' knowledge about how to deal with diabetic children is unknown. Meanwhile young diabetics' health often depends on appropriate facilities and the correct course of action in life-threatening situations.

The aim of the study was to evaluate the knowledge of primary school teachers in the Lubelskie Province, Poland, about hypoglycaemia and to determine educational needs necessary to ensure the correct management of hypoglycaemia by teachers.

Material and methods. The study took the form of a 27-item audit survey. The questionnaire was completed by 200 teachers of randomly selected primary school teachers in the Lubelskie Province, Poland.

Results. The teachers were an average of 40.05 ± 9.5 years old and had worked in their profession for an average of 15.4 ± ± 9.1 years. 26% of the teachers reported that they had taught children with diabetes mellitus, 46% of whom said they knew how to operate a glucose meter. 32.7% were not familiar with the symptoms of hypoglycaemia and 76.9% could not give blood glucose levels indicating hypoglycaemia. 42.3% did not know how they could help a hypo-glycaemic child. 53.7% knew what glucagon is used for, but only 23.1% knew when glucagon should be given and a mere 15.4% said they knew how to give glucagon. 8% of all the teachers had witnessed hypoglycaemia in a child. In spite of that one in three teachers did not know how to help a hypoglycaemic child and only one in for declared the ability to give glucagon.

Conclusions. The level of primary school teachers' knowledge is insufficient to ensure that children with diabetes mellitus are helped if they develop hypoglycaemia. Our study demonstrates the need for educational activities in this professional group.

Diabet Dośw i Klin 2008, 8, 4, 157–158

key words: type 1 diabetes mellitus, hypoglycaemia, knowledge, teachers, primary schools

Introduction

Diabetes mellitus (DM) is one of the most common chronic diseases in children. The prevalence of type 1 DM in many regions of the world is increasing annually by 2.5––3.0% and the disease is affecting younger and younger age groups [1, 2]. Primary school children spend several hours at school each day, where they must take their insulin injections and are running the risk of complications, such as hypoglycaemia. The level of primary teachers' knowledge about how to deal with diabetic children is unknown. Meanwhile young diabetics' health and life often depends on appropriate facilities and the correct course of action in life-threatening situations. No similar study has been conducted in the Lubelskie Province, Poland, so far.

The aim of the study was to evaluate the knowledge of primary school teachers in the Lubelskie Province, Poland, about hypoglycaemia and to determine educational needs necessary to ensure that children with DM are properly dealt with by their teachers.

Address for correspondence:
dr n. med. Iwona Chmiel-Perzyńska
Katedra Medycyny Rodzinnej
Uniwersytet Medyczny w Lublinie
ul. Staszica 13, 20–081 Lublin
Tel/fax (+48 81) 532 34 43
e-mail: iwonaperz@poczta.onet.pl

Diabetologia Doświadczalna i Kliniczna 2008, 8, 4, 157–158

Material and methods

The study took the form of a 27-item audit questionnaire, which was distributed among 753 randomly selected primary school teachers in the Lubelskie Province,

Poland. The questionnaire was completed by 200 teachers. The teachers were an average of 40.05 ± 9.5 years old and had worked in their profession for an average of 15.4 ± 9.1 years. Further analysis included data from the group of teachers who were currently teaching a child with DM or had taught one in the past [26% of the respondents (n = 52)].

Results

Nearly all the teachers who had ever taught a child with DM [98% (n=51)] know what a glucose meter was, but only 46% (n = 24) declared being able to operate it.

As many as 32.7% (n = 17) were not familiar with the manifestations of hypoglycaemia and 76.9% (n = 40) did not know what blood glucose levels are indicative of hypoglycaemia. 42.3% (n = 22) did not know how they could help a hypoglycaemic child. 57.7% (n = 30) knew what glucagon is used for, but only 23.1% (n = 12) knew when glucagon should be given and a mere 15.4% (n = 8) said they knew how to give glucagon. Two teachers said that a child with hypoglycaemia could be helped with an administration of insulin. 92% considered their knowledge sufficient and only one in five expressed a willingness to participate in a free training on diabetes.

Discussion

Our results demonstrate that the level of primary school teachers' knowledge about the detection and management of hypoglycaemia is insufficient. In spite of the fact that the surveyed group of teachers were teaching or had taught children with DM, almost half of them did not know how to help such children. There are few bibliographical reports on the level of teachers' knowledge about the detection and treatment of hypoglycaemia in children, however, the available data demonstrate an insufficient level of education in this professional group with respect to first aid in diabetic children with hypoglycaemia [3, 4]. A Spanish study conducted in families of diabetic children showed that only one in three parents believed that their child's teacher was able to correctly diagnose the symptoms of mild hypoglycaemia [5]. Even physical education teachers, who should possess a more extensive knowledge about DM because of the higher risk of hypoglycaemia during their classes, did not know enough about the subject, although respondents who had contact with a diabetic child did provide correct answers more frequently [6]. According to British investigators, a mere 25% of teachers have sufficient knowledge about the diagnosis and management of acute complications of diabetes [7]. Hellems and Clarke found that 3/4 of a group of 185 school children experienced episodes of hypoglycaemia during the school year [8]. However, the schools these children attended employed nurses, which increased the safety of children on the one hand and partially took the responsibility to provide first aid away from teachers. Currently, few schools in the Lubelskie Province employ medical staff full time. Hence the responsibility for administering first aid rests with the teachers. Although the problem of DM and hypoglycaemia is often ignored, it seems justified to draw attention to the possibility of this complication during class.

Conclusions

The level of primary school teachers' knowledge about diabetes mellitus is insufficient to ensure that diabetic children are helped if they develop complications. Our study demonstrates the need to conduct appropriate educational activities among teachers.

The study has been funded by the authors.

References

1. Incidence and trends of childhood type 1 diabetes worldwide 1990–1999. DIAMOND Project Group. Diabet Med 2006; 23: 857–566.
2. Harjutsalo V, Sjöberg L, Tuomilehto J. Time trends in the incidence of type 1 diabetes in Finnish children: a cohort study. Lancet 2008; 371: 1777–1782.
3. Lewis DW, Powers PA, Goodenough MF, Poth MA. Inadequacy of in-school support for diabetic children. Diabetes Technol Ther 2003; 5: 45–56.
4. Tahirović H, Toromanović A. How much can school staff help children with diabetes type 1 in school? Med Arh 2006; 60: 222–224.
5. Amillategui B, Calle JR, Alvarez MA, Cardiel MA, Barrio R. Identifying the special needs of children with type 1 diabetes in the school setting. An overview of parents' perceptions. Diabet Med 2007; 24: 1073–1079.
6. Tahirovic H, Toromanovic A. How far are physical education teachers from elementary school prepared to help pupils with diabetes while they are at school? Minerva Pediatr 2007; 59: 767–673.
7. Bradbury AJ, Smith CS. An assessment of the diabetic knowledge of school teachers. Arch Dis Child 1983; 58: 692–696.
8. Hellems MA, Clarke WL. Safe at school: a Virginia experience. Diabetes Care 2007; 30: 1396–1398.