

Posters on Display – Psychosocial Issues in Diabetes

P042

A qualitative study of schools that support students with type 1 diabetes

L. Fried¹, E. Davis², C. Jones³, R. Vithiatharan², D. Cross², J. Lewis², Psychosocial

¹Telethon Kids Institute, Health Promotion and Education Research, Perth, Australia, ²Telethon Kids Institute, Perth, Australia, ³Department of Education, Perth, Australia

Schools have an important role to play in supporting the psychosocial health of young people with T1D and studies have found that good school-based diabetes care and support for students is related to better diabetes management and quality of life. However, research has indicated that support for students with type 1 diabetes (T1D) across schools in Western Australia is inconsistent. Schools are often faced with challenges in providing support strategies for students with T1D and other chronic and mental health conditions and strategic capacity building is needed.

Aim: This project aimed to investigate how schools, perceived as being supportive of students with T1D, provide support for the psychosocial wellbeing and disease management of these students.

Method: Semi-structured interviews were conducted with school staff, students and parents. Nine schools participated in the study.

Results: Participating schools provided various levels of support for students with T1D ranging from interpersonal support such as emotional support through to support of an organisational type including policies and communication plans. Therefore, school support for students with T1D was depicted using a bio-ecological framework. Participating schools also discussed the characteristics of the school that enabled support for students with T1D including an inclusive and flexible culture.

Conclusion: The findings provide a framework of psychosocial support and disease management that can be used to enhance the capacity of all schools to support the wellbeing of students with T1D.

P043

Manipulation of capillary blood glucose meter readings, clinical cases and experimental trial

R. Roman^{1,2}, M. Pichott³, A. Avila¹, V. Mericq¹

¹Institute for Maternal and Child Research University of Chile, San Borja Arriaran Hospital, Santiago, Chile, ²Clinica Las Condes, Pediatría, Santiago, Chile, ³Finis Terra University Faculty of Medicine, Santiago, Chile

We present 2 adolescents with Type 1 Diabetes (T1D) whose HbA1c 10.5% & 10.7% were discordant with capillary blood glucose (BG) recorded in their glucose meters (GM) *Accu-chek Performa*[®] (186 ±80 & 116±63 mg/dl, with 6.0 & 6.1 BG per day). Both had frequent hypoglycemia and immediate repetition of high values with lower values in the second sample. One girl was started on insulin pump with continuous glucose monitoring, showing low sensor adherence from the beginning, with frequent issues as prolonged signal loss,

defective sensors, calibration failures and her dog broke the transmitter. She was admitted twice with hyperglycemia and ketosis having adequate BG recorded just before the episodes.

Objective: To reproduce a suspected manipulation of BG results.

Method: A volunteer with T1D was submitted to 50 BG with a similar GM during a 24-minute period. BG was measured adequately 3 times at the beginning (BG=170, 184 & 189mg/dl) and once at the end of the experience (BG=164mg/dl). The BG technique was modified reducing the volume or diluting the blood drop with water or alcohol. BG was considered false by manipulation if it was >15% over or below 181mg/dl (mean initial value).

Results: The GM recorded 29 out of 50 readings, none of the "error readings", (85% error 4, 15% error 1) were stored (n=21). BG diluted with alcohol (n=5) were 100% false high (BG=364, 232, 245, 214 & 201 mg/dl). BG diluted with water (n=20) were 10% correct (BG=186 & 180mg/dl), 40% false low in the target range (BG=155, 76, 122, 103, 115, 154, 104, 105mg/dl), 15% false low in hypoglycemia risk range (BG=61, 67, 56mg/dl) 20% false low < 54mg/dl (BG=19, 31, 27, 17mg/dl), & 15% false severe low (BG=Lo).

Conclusion: Some patients may manipulate BG results in the GM to fit with family and providers expectations. This practice should be suspected when HbA1c and BG are discordant, with excessive BG test strips consumption compared to the records, and when BG is often repeated with dissimilar results.

P044

Prevalence of somatic symptom disorder requiring hospitalization in children and adolescents with type 1 diabetes mellitus

G. Tornese¹, E. Faleschini¹, E. Barbi^{1,2}

¹Institute for Maternal and Child Health IRCCS Burlo Garofolo, Trieste, Italy, ²University of Trieste, Trieste, Italy

Introduction: Prevalence of somatic symptom disorder (SSD) in pediatric patients with type 1 diabetes mellitus (T1DM) is unknown.

Objectives: To investigate the prevalence of SSD that required hospital admission in a cohort of T1DM patients with age < 18 years.

Methods: This study comprises data from 67 patients with T1DM < 18 years (47% female, 49% on insulin pump, median age 13.4 years [IQR 11.1-15.4], median duration of T1DM 6.0 years [IQR 3.9-8.6], median HbA1c at last visit 7.3% [IQR 6.9-7.8]) followed in the Institute for Child and Maternal Health IRCCS "Burlo Garofolo" in Trieste, Italy. Data on T1DM patients with hospital admission for SSD (according to DSM-5 criteria introduced in 2013) were collected.

Results: The prevalence of T1DM pediatric patients admitted in Pediatric Department with a final diagnosis of SSD was 7.5% (n=5) in our sample. Median age of patients was 14.76 years, median duration of T1DM 7.4 years, median HbA1c at last visit 7.5%, 80% on insulin pump. Median length of admission was 4 days [range 1-7], with a median of 2 accesses to emergency department prior to admission

[range 0-9] and a median of 2 investigations performed to rule out organic diseases [range 1-4]. One patient was admitted twice (the first reported symptom was left leg pain, the second - after 2 years - abdominal pain). One patient reported several symptoms (abdominal pain - visual disturbances - knee pain). Abdominal pain was reported in 4 out of 5 patients, the other had deglutition problems.

Conclusions: Although the prevalence of SSD in general population is unclear, it is supposed to be 4-6%. A history of physical illness and treatment is reported to increase the risk of developing SSD. In our study we found that the prevalence of SSD in T1DM patients requiring hospitalization is 7.5%. Diabetes health care professional should always be aware that any illness trigger may set off a cascade of symptoms and lead to prolonged recovery or symptom recurrence after illness resolves.

P045

Motivational interview to improve metabolic control in adolescents with poorly controlled type 1 diabetes: A randomized controlled trial

M.-A. Pulkkinen¹, A.-K. Tuomaala², T. Sarkola², P. Miettinen², T. Laine², R. Lapatto², M. Ojaniemi³, P. Tossavainen³, K. Kaunisto³, M. Hero²

¹Helsinki University Hospital, Children's Hospital, Espoo, Finland, ²Helsinki University Hospital, Children's Hospital, Helsinki, Finland, ³Oulu University Hospital and University of Oulu, Children's Hospital, Oulu, Finland

Introduction: Poor glycemic control during adolescence markedly increases the incidence of later micro- or macrovascular complications in type 1 diabetes (T1D) patients. At the same time, treatment adherence declines and results in increased HbA1c level. At present, technical advancements in insulin delivery fail to address these challenges in self-care. Thus, easily adoptable methods that improve insulin treatment adherence are needed to overcome problems faced by adolescent T1D patients. We investigated whether motivational interviewing (MI), a counseling approach designed to facilitate intrinsic motivation in the patient to change behavior, improves glycemic control and variability in poorly controlled adolescent T1D patients.

Methods: In this national, multicenter, randomized controlled trial, adolescent T1D patients (n=45), aged 12 to 15.9 years, with poor glycemic control (HbA1c > 75 mmol/mol) were randomized to either standard education (SE) or MI plus SE group for 12 months. Half of the study physicians were randomized to employ MI in patient care and participated in a 2-day course on the use of MI. The patients were followed 3-monthly. The main outcome measures were changes in HbA1c, time in range (TIR) and glycemic variability (CV). Study is registered at clinicaltrials.gov (NCT02637154).

Results: The mean adjusted 12-month changes in HbA1C were similar in the MI plus SE and SE groups (-3.6 vs. -1.0 mmol/mol, respectively, P=0.57). Similarly, no differences between the groups in mean adjusted 12-month changes in TIR (-0.8 vs. 2.6 %, P=0.53) and CV (-0.5 vs. -6.2, P=0.26) were evident. The patient recruitment number however correlated with the 12-month change in HbA1C in MI plus SE group (r= -0.5, P=0.006) but not in the SE group (r= 0.2, P=0.4).

Conclusions: The use of MI by diabetologist in the management of adolescents with poorly controlled T1D is not superior to SE alone. However, increasing experience with the method may improve outcomes.

P046

Insulin edema in a 14 year poor adolescent girl with type 1 diabetes mellitus due to surreptitious [but not therapeutic] self insulin use [project DISHA: receiving free medical care]

K. Haridas¹, A. Govind¹, M.S. Vaishnav², S. Reddy¹, N. Gaekwad³, S. Dinesha¹, R. Harsha⁴, M. Narayanaswamy¹, M. Chitra¹, J. Thimmaiah³, N. Garg¹, R. Kashivishwanath³, A. Hegde¹, Diabetes Endocrinology Study Group Samatvam Jnana Sanjeevini

¹Jnana Sanjeevini Medical Center and Diabetes Hospital, Diabetes Endocrinology, Bangalore, India, ²Indian Institute of Science, Center for Nano Science and Engineering, Bangalore, India, ³Samatvam Science and Research for Human Welfare Trust, Diabetes Endocrinology, Bangalore, India, ⁴Samatvam Endocrinology Diabetes Center, Diabetes Endocrinology, Bangalore, India

Introduction: Insulin edema is an uncommon complication of insulin therapy, mostly appreciated in patients soon after the commencement of insulin therapy. Rare instances of progression to overt cardiac failure, development of pleural effusion and nephrotic syndrome have been reported

Objective: Insulin edema in T1DM adolescent due to surreptitious insulin use triggered by psychosocial stressors

Methods: T1DM age 6 y; recent HbA1c 12.5%, chronically poorly controlled, despite intensive basal bolus insulin [48 units/day self-administered regular and NPH human].

Most enigmatically, presented with multiple episodes of unexplained hypoglycemia with BGs 30-60 mg/dl and "apparently" grossly decreased insulin requirements. Despite lowering insulin doses by treating team [to only 4 units for whole day!!!! disappearing T1DM????], hypoglycemias continued, with new symptoms of rapid weight gain, swelling face/limbs/abdomen, dyspnea- following 2 days. No evidence of acute/sub-acute renal/hepatic/cardiac/pulmonary/infectious disorders. Treated with fluid and salt restriction. No further hypoglycemia episodes; rapidly improved [disappearance of dyspnea and anasarca].

Results: Various psychosocial [death of father, single parent etc] and economic [less educated working mother] challenges faced by family, and a very recent psychological stressor [impending school examinations] were discovered, with diagnosis of surreptitious insulin use. Persistently high HbA1c, with recent lower serum fructosamine supported diagnosis of transient "improved blood glucose", due to recent short lived overdose of insulin.

Conclusion: Insulin edema is mostly appreciated in newly diagnosed or poorly controlled diabetes, usually shortly after starting intensive insulin therapy. This is the first documented case of insulin edema in a previously diagnosed T1DM in a non-DKA setting, due to surreptitious self-insulin use, and not due to institution of insulin therapy by medical team.