

## Management of type 1 diabetes



### Risk of psychiatric disorders: Looking to our Swedish counterparts

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Since entering medical school in 1972 (hard to believe I know), I've been told that the NHS has led the world in healthcare. Sometimes, however, we have to accept that we have been a bit slow off the mark.

Since 1977, the Swedish Childhood Diabetes Register has recorded new incidents of type 1 diabetes in children below the age of 15 years with a high level of national coverage (96–99%). Then in 1996, the Swedish National Diabetes Register was launched and has been used to assess the quality of diabetes care ever since. Meanwhile our own National Diabetes Audit (for England) has been in place for less than 10 years.

The paper by Butwicka et al, summarised alongside, illustrates the importance and usefulness of national data collections in allowing large-scale comparisons between people who have diabetes with the general population. It is well known that mood disorders are more common in people with diabetes, but this study (using Swedish data) shows that the prevalence of psychiatric disorders triples

within the first 6 months after the diagnosis of type 1 diabetes. Suicide attempts are also shown to be at a higher prevalence in people with diabetes than the general population.

Back in the UK, the “Minding the Gap” survey, conducted in 2008, disappointingly found that 85% of people aged 17 or over with diabetes either have no defined access to psychological support and care, or at best have access to a local generic mental health service only (Diabetes UK, 2012). The Best Practice Tariff has helped improve support for children with diabetes, but anecdotal discussions with colleagues working in transition services

suggest that psychology services are far from being comprehensively available. The paper by Butwicka et al illustrates why such services should be an essential component of all young adult services. ■

**“The paper by Butwicka et al illustrates why psychological services should be an essential component of all young adult services.”**

Diabetes UK (2012) *Minding the Gap. The provision of psychological support and care*. Diabetes UK, London. Available at: <http://bit.ly/1H1Nku5> (accessed 09.06.15)

### Diabetes Care

### Risk of psychiatric disorders: Children and young people

Readability ////

Applicability to practice ////

WOW! Factor ////

**1** The authors sought to determine the risk of psychiatric disorders and suicide attempts in children and young people with T1D by comparing them to their healthy siblings and the general population in a population-based case-cohort study in Sweden.

**2** In total, 17 122 children with T1D and 18 847 healthy siblings were identified and followed until their 18<sup>th</sup> birthday. Their risk of psychiatric disorders was compared with matched control children and adolescents from the Total Population Register of Sweden.

**3** The risk of psychiatric morbidity in children with T1D tripled within 6 months of diabetes onset (hazard ratio [HR], 3.0 [95% confidence interval (CI), 2.7–3.4]) and doubled over the whole observation period (HR, 2.1 [95% CI, 2.0–2.2]).

**4** An increased risk was also reported in suicide attempts and in most other categories of psychiatric disorders.

**5** Among the cohort of children with T1D, the risk of psychiatric disorders decreased over time for those born between 1973 and 1986 (HR, 2.7 [95% CI, 2.2–3.3]), and for those born between 1997 and 2009 (HR, 1.9 [95% CI, 1.8–2.0]).

**6** Later onset of T1D ( $\geq 12$  years) was also associated with an increased risk in psychiatric disorders compared with early diagnosis ( $< 7$  years).

Butwicka A, Frisén L, Almquist C et al (2015) Risks of psychiatric disorders and suicide attempts in children and adolescents with type 1 diabetes: a population-based cohort study. *Diabetes Care* **38**: 453–9

## Diabet Med

### International comparison on T1D glycaemic control

Readability ✓✓✓✓  
 Applicability to practice ✓✓✓✓  
 WOW! Factor ✓✓✓✓

**1** This paper describes an international, large-scale analysis of glycaemic control in T1D using data from over 20 regional or national registers. Registers included general or clinical-based populations.

**2** The sample sizes from available sources ranged from 355 to 173 880 people, including children and adults. The proportions of people with HbA<sub>1c</sub> <58 mmol/mol (<7.5%) and ≥75 mmol/mol (≥9.0%) were compared by age and sex.

**3** In total, there were data available for 324 501 people and the proportions of people with HbA<sub>1c</sub> <58 mmol/mol (<7.5%) varied hugely among each age group: from 15.7% to 46.4% among 44 058 people aged <15 years, from 8.9% to 49.5% among 50 766 people aged 15–24 years and from 20.5% to 53.6% among 229 677 people aged ≥25 years.

**4** There were small differences between the sexes for glycaemic control.

**5** The data show that the majority of people with T1D have higher HbA<sub>1c</sub> levels than recommended in published guidelines and are, therefore, at risk of developing microvascular and macrovascular complications.

**6** This extensive, large comparison highlights that improvements can be made in all populations. The authors hope this report will trigger countries to tackle the obstacles to treatment and trigger healthcare professionals and clinicians to review HbA<sub>1c</sub> regularly, especially in young adults.

McKnight JA, Wild SH, Lamb MJ et al (2014) Glycaemic control of type 1 diabetes in clinical practice early in the 21<sup>st</sup> century: an international comparison. *Diabet Med* 15 Dec [Epub ahead of print]

## Diabetes Metab Res Rev

### Overweight rate: higher in young women with T1D

Readability ✓✓✓✓  
 Applicability to practice ✓✓  
 WOW! Factor ✓✓

**1** The aim of this Israeli study was to determine the prevalence of overweight, obesity and metabolic syndrome components among children, adolescents and young adults with T1D.

**2** The cohort comprised 326 consecutive people with T1D aged 5 to 30 years. In total, 19% of the study population was overweight and 5.2% were obese.

**3** Younger female participants, aged 15 to <18 years and 18 to <25 years were significantly overweight compared to healthy age-matched women ( $P<0.0001$  for both age groups), while there was no difference in the male group compared to the general population.

Pinhas-Hamiel O, Levek-Motola N, Kaidar K et al (2015) Prevalence of overweight, obesity and metabolic syndrome components in children, adolescents and young adults with type 1 diabetes mellitus. *Diabetes Metab Res Rev* 31: 76–84

“Using overnight closed-loop control provided visible improvements in morning and overnight glucose levels and also led to improved daytime control on the following day.”

## Diabetes Technol Ther

### Midnight “bedside” closed-loop control

Readability ✓✓✓✓  
 Applicability to practice ✓✓✓✓  
 WOW! Factor ✓✓✓✓

**1** Ten adult insulin users were enrolled in a randomised crossover trial comparing 5 consecutive nights of closed-loop control ([CLC] otherwise known as artificial pancreas therapy) with sensor-augmented insulin pump therapy of the same duration in an outpatient setting at home.

**2** A new CLC concept was tested: the aim being to “reset” patients’ glucose overnight to near-normoglycaemia by morning, with the goal of stabilising a person’s glucose control and taking advantage of overnight, undisturbed glucose homeostasis.

**3** CLC significantly improved the amount of time spent between 80 and 140 mg/dL (4.4 and 7.8 mmol/L) compared to insulin pump therapy ( $P<0.001$ ).

**4** There were also visible improvements in morning and overnight glucose levels that led to improved daytime control the following day.

Brown SA, Kovatchev BP, Breton MD et al (2015) Multinight “bedside” closed-loop control for patients with type 1 diabetes. *Diabetes Technol Ther* 17: 203–9

## Diabetes Technol Ther

### Predictors of CSII effectiveness

Readability ✓✓✓✓  
 Applicability to practice ✓✓✓✓  
 WOW! Factor ✓✓✓✓

**1** The authors hypothesised that there are substantially greater reductions in HbA<sub>1c</sub> after initiation of continuous subcutaneous insulin infusion (CSII) in individuals with poor glycaemic control and that other predictors of CSII effectiveness may also exist.

**2** Data over a 5-year period from 10 outpatient clinics in Sweden were used. In total, 272 people treated with CSII were compared to 2437 controls on multiple daily injections (MDI).

**3** At 5 years, significantly greater reductions in HbA<sub>1c</sub> by CSII compared with MDI were found for individuals with higher baseline HbA<sub>1c</sub> ( $P=0.032$ ) and lower baseline BMI ( $P=0.013$ ).

**4** Individuals with a higher HbA<sub>1c</sub> prior to starting CSII therapy have the highest chance of improving glycaemic control once starting CSII therapy, although the effect was quiet modest.

Clements M, Matuleviciene V, Attvall S et al (2015) Predicting the effectiveness of insulin pump therapy on glycemic control in clinical practice. *Diabetes Technol Ther* 17: 21–8