

YOUNG PEOPLE WITH TYPE 1 – ROOM FOR IMPROVEMENT

Two new studies show that both clinical and psychosocial outcomes in young adults with Type 1 diabetes leave much to be desired, and that those diagnosed before the age of 35 run an increased risk of depression. The findings should help focus more attention on this vulnerable group



A retrospective audit of young adults (16–25 years) with Type 1 diabetes that was carried out in 2003¹ revealed suboptimal glycaemic control, poor attendance at clinic and high rates of microvascular complications. The authors came to the conclusion that ‘we are failing to achieve high standards of care for young adults with diabetes’. Ten years on, there have been many technical improvements in diabetes care, such as analogue insulins and new delivery devices. Have these been accompanied by a corresponding improvement in outcomes among young adults with Type 1? A new study, by researchers in Sheffield, seeks to answer this question, looking at current medical and psychosocial outcomes among patients attending one of the clinics that was featured in the 2003 audit.

A related study, from Northern Ireland, reveals that depression is nearly twice as common among young people with Type 1, when compared with their peers who do not have diabetes. The findings from these studies show why Diabetes UK’s Children and Young Person’s campaign, which is soon to enter its next phase, is so important.

Setting the scene

Participants for the Sheffield study were drawn from two clinics dedicated to the care of young adults with diabetes, based at Royal Hallamshire and Northern General Hospitals. Patients come into the clinic from paediatric care at the age of 16 and move into adult services at the age of 21. They are cared for by a multidisciplinary team that includes consultants and diabetes specialist nurses, from both paediatric and adult diabetes services, as well as a dietitian. Psychological support is also available, by referral. The patients would typically have an appointment every three months.

All those with Type 1 diabetes diagnosed at least six months previously were eligible for the study. The research team invited 118 young people to join the study and 96 consented. There were no significant differences between those who did, and those who did not, join the study, suggesting that results would be representative of the clinic population as

a whole. Over 90 per cent of the study group lived with their parents, 91.3 per cent were White British and 73 per cent were still in education. They were on either multiple daily injections (MDI, 75 per cent), twice-daily insulin (12.5 per cent) or insulin pumps (11.5 per cent).

Clinical and psychosocial data

The following information was extracted from participants’ records:

- mean HbA1c
- non-attendance (percentage of missed appointments from total appointments)
- hypertension (blood pressure $\geq 135/85$ mm Hg)
- elevated urinary albumin:creatinine (>2.5 mg/mmol[male]; >3.5 mg/mmol[female])
- retinopathy.

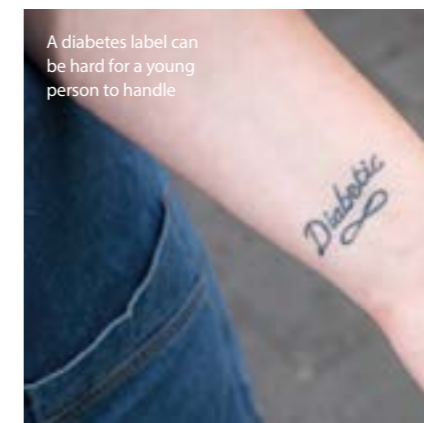
The young people self-reported their symptoms of depression and anxiety by using the Hospital Anxiety and Depression Scale, and scored their eating problems with the Diabetes Eating Problem Survey Revised.

Comparison with 2003

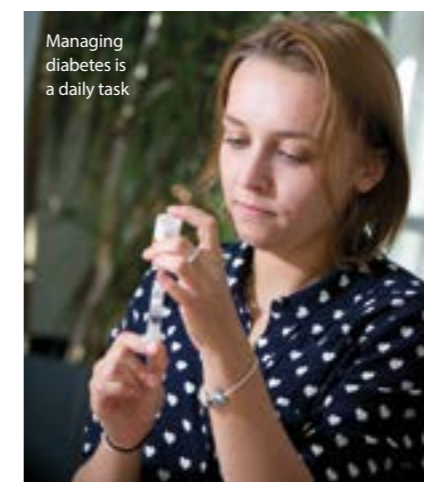
Statistical analysis of the above data allowed comparison with that from the 2003 audit and other studies. Thereby, the researchers were able to assess how Type 1 diabetes care and management in young adults has changed over the last 10 years.

Only 9.4 per cent of the group achieved the recommended HbA1c level of <58 mmol/mol (<7.5 per cent). Mean HbA1c was 86mmol/mol (10.0 per cent) compared with 79mmol/mol (9.4 per cent) in 2003. Mean HbA1c in this study was significantly higher among female patients than among male patients and lower among insulin pump users and those on MDI, compared with those on twice-daily insulin. Non-attendance was lower than in 2003, but higher among those who had been attending clinic for longer. Non-attendance was not related to diabetes duration.

The study revealed a significant level of psychosocial distress. Nearly a quarter had been referred to clinical psychology. Self-reported anxiety (26.6 per cent of the participants) and



A diabetes label can be hard for a young person to handle



Managing diabetes is a daily task

No improvement in 10 years

It is concerning that these new findings reveal that mean HbA1c among young people with Type 1 diabetes is still considerably higher than recommended. This is in line with other reports. Furthermore, as might be expected, many are beginning to show signs of microvascular complications. For instance, rates of non-proliferative retinopathy are higher than in 2003, although this may be at least partly attributed to the implementation of a national programme of systematic photographic screening, which is more sensitive in detecting retinopathy.

There are also high rates of anxiety, depression and disordered eating behaviour among young people with Type 1 diabetes, and depression goes with higher HbA1c levels. However, there were at least some positives emerging from this new study in that screening rates are up for hypertension, nephropathy and retinopathy.

The researchers point out a few limitations in their study as a comparison with 2003. Only one of the original centres took part in this study. There have also been changes in diabetes technology, such as the introduction of digital retinopathy screening, which makes some direct comparisons difficult. However, the new study also has some notable strengths. Response rate was good and the similarities between the responders and the non-responders suggests that the findings can be generalised, at least to an extent. The research focuses upon a specific age group with unique needs and poor outcomes, measuring psychosocial health as well as a wide range of physical health outcomes.

Finally, rates for eye screening were much the same as reported in 2003, but nephropathy screening rates had improved. The current sample had a higher prevalence of non-proliferative retinopathy, but pre-proliferative retinopathy rates were similar. Fewer patients (14.6 per cent) in the current study had an albumin:creatinine ratio >2.5 mg/mmol compared with 2003, when the figure was 21 per cent.

“Only 9.4 per cent of the group achieved the recommended HbA1c level”

In conclusion, the paper’s authors say that while new technologies do offer the potential for better diabetes control, this will not happen unless young people are better supported in taking more responsibility for their self-management. There may also be much to learn from other European clinics, which have better outcomes with young people and higher rates of insulin pump use. It is also important to improve the transition from paediatric care (an issue which Diabetes UK is focusing on with its

Children and Young Person's campaign and with targeted research funding). Finally, healthcare professionals should work towards better integration of mental health support with diabetes care and, of course, take careful note of young people's own views about their diabetes clinic.

Depression in diabetes study

The second study, from the UK Clinical Research Collaboration Centre of Excellence for Public Health, Northern Ireland, and Queen's University, Belfast, assessed depression rates in newly diagnosed young people with Type 1 diabetes, recording GP diagnoses and antidepressant use. The secondary outcome was to determine whether those with diabetes complications had higher rates of depression than those without complications. This is the first study to investigate long-term depression from time of diagnosis, as other studies have looked at selected short-term time intervals after diagnosis.

Patient data was drawn from the Clinical Practice Research Datalink, which is the world's largest dataset of longitudinal primary care patient records. It covers 8 per cent of the UK population and contains both diagnosis codes and prescription records. The researchers extracted data on a group of 5,548 patients aged under 35 who had a diagnosis of Type 1 diabetes and were receiving insulin prescriptions. Each was matched with up to two controls (10,657 in total) of the same age, sex and general practice without diabetes.

Diagnoses of depression and antidepressant prescriptions among the subjects and their controls were recorded. They were followed from the date of the first insulin prescription until a depression outcome or death or leaving the practice. The mean follow-up time was 4.8 years and mean age at diagnosis was 17.7 years.

Analysis of this data showed that young people with diabetes were twice as likely to have depression as were controls. As many as 19.8 per cent of subjects were taking antidepressants within 10 years of diagnosis. Those with

a history of retinal or renal complications did have a slightly increased risk of depression compared with those without complications. However, this increased risk did not reach statistical significance. Time from diagnosis also had an impact on risk of depression, with a higher risk in the first five years.

In conclusion, the authors note that transition to adulthood is challenging enough for young people, without the added stress of Type 1 diabetes. These findings suggest that this age group is especially vulnerable to depression and the diabetes team should be sure to monitor psychological health among these young adults. Further research into the factors underlying depression among people with Type 1 diabetes would be welcome. Together, these two studies suggest that the physical and psychological wellbeing of young people with Type 1 diabetes is less than optimal. The findings should prompt healthcare professionals and policy makers to pay special attention to this group of patients.

i 1 Wills CJ, Scott A, Swift PGF et al (2003). Retrospective review of care and outcomes in young adults with type 1 diabetes. *British Medical Journal* 327; 260-261

This is a digested version of Johnson B, Elliott J, Scott A et al (2014). Medical and psychological outcomes for young adults with Type 1 diabetes: no improvement despite recent advances in diabetes care. *Diabetic Medicine* 31; 227-231 and of Morgan E, Patterson CC and Cardwell CR (2014). General practice-recorded depression and antidepressant use in young people with newly diagnosed Type 1 diabetes: a cohort study using the Clinical Practice Research Datalink. *Diabetic Medicine* 31; 241-245. To download the full articles, go to <http://onlinelibrary.wiley.com/doi/10.1111/dme.12305/pdf> and <http://onlinelibrary.wiley.com/doi/10.1111/dme.12330/pdf>

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