Management of type 1 diabetes

Raising the awareness of hypoglycaemia amongst healthcare professionals to provide support for families

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It's not often that scientific papers are described as harrowing, but the paper by Lawton et al (summarised alongside) comes pretty close to this description. Medical practitioners are often critical of qualitative research, which is often described in derogatory terms as "touchy-feely stuff". We've been lulled into believing that unless $P<0.05$ and $n>$infinity, the science is of no value. Of course, when it comes to testing one treatment against another, this is perfectly valid. However, people with diabetes cannot be reduced to averages of blood glucose, HbA_{1c} levels or amputations per 100 000 of the population.

"The patient wasn't quite sure why he had been referred, but fortunately his wife graphically described finding her unconscious husband on the wrong side of a dry stone wall straddled by a still warm quad bike."

A large part of what we do as clinicians is to help people live with a long-term condition (LTC) they don't want. Unfortunately, our response to individuals with high blood glucose is generally to "get them down", followed by a two-sentence summary of the benefits of tight control versus not so tight control, aka the results from the DCCT (Diabetes Control and Complications Trial). A negative response to the clinician's question, "have you had any severe hypos recently?" is guaranteed – especially from car drivers. Recently, a GP referred to me a farmer from the Peak District with type 1 diabetes because of "recurrent hypos". The patient wasn't quite sure why he had been referred, but, fortunately, his wife graphically described finding her unconscious husband on the wrong side of a dry stone wall straddled by a still warm quad bike. The family now called him every 30 minutes when he was out on the farm, and sent out a search party if he failed to respond.

I agree with Lawton et al that raising the awareness of hypoglycaemia amongst healthcare professionals is essential, and the development of proactive support for families should be considered. Life with a LTC can't be much fun, and neither can be life for those living with someone with an LTC.

DIABETES MEDICINE

Linking clinical and psychological outcomes in young adults with T1D

No scores published as Adrian Scott is an author of this paper

1 The aim of this study was to assess the biomedical and psychological outcomes of young adults (aged 16–21 years) with T1D from two clinics in the UK, and to compare them to results from previous audits.

2 A total of 96 young people self-reported depressive symptoms and anxiety, and eating problems. They allowed the authors access to their medical records.

3 Clinical cut-off scores from the questionnaires were significantly higher for young female adults compared to males for depression and anxiety, and disordered eating behaviours (DEBs).

4 Those above the cut-off for depressive symptoms had significantly higher HbA_{1c} levels. There was, however, no difference in HbA_{1c} levels above or below the cut-off for anxiety or DEBs.

5 The authors conclude that the above-recommended levels of glycaemia, despite technological advances and improvements in care, are also leading to many young people starting to show signs of microvascular complications.

Johnson B, Elliott J, Scott A et al (2013) Medical and psychological outcomes for young adults with Type 1 diabetes *Diabet Med* 19 Aug [Epub ahead of print]

DIABETES CARE

Hypoglycaemia unawareness: Its effect on the family

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓✓

1 In-depth interviews with 24 adult family members of people with T1D (termed patients) were carried out to investigate the impact of hypoglycaemia unawareness (HU), as well as the family members' involvement in the care of hypoglycaemia, and their information and support needs.

2 Data collection and analysis took place within the interview, and issues raised in earlier interviews were used to plan discussion for later interviews. Recruitment for new participants stopped when no new data was found.

3 Results from the interviewed family members suggested that they had curtailed their own lifestyles, and were neglecting their health and social needs to "mind the patient". This behaviour was sometimes encouraged by the patient, who felt vulnerable when left alone.

4 There was an outward and growing sense of resentment and ambivalence conveyed amongst 15 of the family members towards the patient.

5 Six family members struggled to acknowledge their own need or right to support, saying that it was the patient that needed the most support.

6 Many interviewees felt that few healthcare professionals asked how they were coping, and they desired a kind of forum or platform for exchanging experiences with people in similar situations.

Lawton J, Rankin D, Elliott J et al (2013) The experiences, views and support needs of family members of people with Hypoglycaemia Unawareness: Interview study. *Diabetes Care* 29 Aug [Epub ahead of print]

"Young people with T1D who had high disturbed eating behaviour scores and engaged in insulin restriction had higher HbA_{1c}, indicating poorer glycaemic control."

DIABETES CARE

DCCT/EDIC cohort: analysing quality of life

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓✓

1 The long-term effects of T1D treatment and T1D complications on health-related quality of life (HRQOL) were investigated in the DCCT/EDIC (Diabetes Control and Complications Trial/Epidemiology of Diabetes Interventions and Complications) cohort.

2 A total of 1441 people were enrolled in the DCCT trial, and 96% volunteered for the EDIC follow-up study.

3 An average follow-up of 23 years was achieved, and the Diabetes Quality of Life (DQOL) questionnaire was administered annually in the DCCT, and every 2 years in the EDIC trial.

4 A reducing event in HRQOL was defined as a ≥5 point drop in the DQOL from baseline on two consecutive evaluations.

5 There was no difference in total DQOL between those that had been in the conventional and intensive cohorts during the DCCT.

6 Higher values of HbA_{1c}, blood pressure and BMI were all associated with a sustained drop of ≥5 points in DQOL scores, and advanced complications (i.e. retinopathy, nephropathy and neuropathy) were also associated with lower DQOL.

7 These results may understate the effects on quality of life in a usual clinical population because the participants were encouraged to continue the intensive programme after the DCCT finished, and there was a relatively low rate of severe diabetes complications.

Jacobson AM, Braffett BH, Cleary PA et al (2013) The long-term effects of type 1 diabetes treatment and complications on health-related quality of life: A 23-year follow-up of the Diabetes Control and Complications/Epidemiology of Diabetes Interventions and Complications cohort. *Diabetes Care* **36**: 3131–8

DIABETES CARE

The prevalence of disturbed eating behaviour in youth

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 This Norwegian study examined the prevalence of disturbed eating behaviour (DEB) and insulin omission in young people with T1D, using the Diabetes Eating Problem Survey-Revised (DEPS-R). This was the first study to use this survey in young people.

2 A total of 770 young people (from 11–19 years of age), who were recruited nationally, completed the DEPS-R, and their medical records were consulted for their clinical features (including HbA_{1c} levels and BMI).

3 A score of ≥20 on the DEPS-R was the cutoff for DEB, as a higher score indicated greater pathology.

4 In the whole cohort, the prevalence of DEB increased with age and weight. Additionally, 31.6% of participants reported insulin restriction and 6.9% reported insulin omission after overeating.

5 In total, 27.7% of the females and 8.6% of the males scored higher than the DEPS-R cutoff ($P<0.001$ for the difference) and 26.2% of females and 4.5% of males reported completely skipping insulin doses after overeating.

6 Those who had high DEB scores and engaged in insulin restriction had higher HbA_{1c}, indicating poorer glycaemic control.

7 Routine and annual screening was suggested to secure the early detection of DEB, so as to improve the rate of serious, late diabetes complications.

Wisting L, Frøisland DH, Skrivarhaug T et al (2013) Disturbed eating behavior and omission of insulin in adolescents receiving intensified insulin treatment: A nationwide population-based study. *Diabetes Care* **36**: 3382–7

DIABETES

Relationship of glycated albumin to other blood glucose measures

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 The authors compared HbA_{1c}, glycated albumin (GA) and mean blood glucose (MBG; calculated from the 7-point glucose profile concentrations) to examine the effect of their inter-relationship on glucose variability in microvascular and cardiovascular disease (CVD).

2 GA was also under investigation in relation to its contribution to the risk of retinopathy, nephropathy, neuropathy and CVD outcomes.

3 In total, a subpopulation of 497 participants from the DCCT (Diabetes Control and Complications Trial) were included.

4 Levels of HbA_{1c} and GA were very highly correlated with each other, and with the mean blood glucose concentrations calculated from the 7-point profile.

5 HbA_{1c} and GA had significant associations with the progression of retinopathy when analysed separately and together. In the progression of nephropathy, HbA_{1c} and GA had a similar association only when analysed separately. This suggests the two complications may result from different aspects of hyperglycaemia.

6 The association of HbA_{1c} and GA with retinopathy and nephropathy was generally stronger than to CVD events, suggesting that hyperglyaemia is more strongly correlated to microvascular complications than to macrovascular complications.

Nathan DM, McGee P, Steffes MW (2013) Relationship of glycated albumin to blood glucose and glycated hemoglobin (HbA_{1c}) values and to retinopathy, nephropathy and cardiovascular outcomes in the DCCT/EDIC Study. *Diabetes* 29 Aug [Epub ahead of print]