

# Barriers to improved glycaemic control in pump therapy

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The cornerstone of treatment for people with type 1 diabetes is the use of insulin therapy to attain an HbA<sub>1c</sub> level of <7.5% (<58 mmol/mol) – this has been shown to achieve a significant reduction in the risk of developing complications (Diabetes Control and Complications Trial Research Group, 1993; NICE, 2009).

In the author's clinic, it was observed that many people with type 1 diabetes using insulin pump therapy had a mean HbA<sub>1c</sub> level of ≥8% (≥64 mmol/mol), which had not improved over the years, despite the team's best and continued efforts. In light of this, the following study was conducted to examine the barriers to improved glycaemic control in this population.

## Methods

Eighty people with type 1 diabetes using insulin pump therapy with an HbA<sub>1c</sub> level ≥8% (≥64 mmol/mol) were invited to participate in an informal group approach, where participants could discuss and find solutions to lowering their HbA<sub>1c</sub> levels. Twenty-one people accepted and 17 participated in four, 1-hour focus groups.

A semi-structured interview schedule was designed, but each group was given freedom to explore any issues that arose. Each focus group was recorded, transcribed and the emerging themes identified.

## Emerging themes

### Expected and realistic HbA<sub>1c</sub> levels

Participants were asked about their current HbA<sub>1c</sub> level and what they were aiming for. Most specified that the optimum HbA<sub>1c</sub> level was approximately 7% (53 mmol/mol), but they anticipated increased hypoglycaemia at this level.

Participants felt that pump therapy had helped them lead a normal life, but they acknowledged the hard work and effort needed to achieve and maintain good glycaemic control.

### Fear of hypoglycaemia and feeling safe

Half of the participants reported intentionally running their blood glucose levels higher than advised because they were fearful of hypoglycaemic episodes and wanted to feel safe. The emotions expressed were of being scared and anxious. Two situations in particular that caused this anxiety were driving and working.

Participants reported taking a pragmatic approach to managing their diabetes, choosing to settle at an HbA<sub>1c</sub> level that suited them, rather than aiming for tight glycaemic control. This is summed up by the following quote from one participant:

**“I am happy around 8 [HbA<sub>1c</sub> percentage] – it suits me as a person and suits my lifestyle.”**

## Conclusion

The results suggest there is a gap between what clinicians and people with type 1 diabetes regard as the optimum HbA<sub>1c</sub> level to aim for when using insulin pump therapy. Participants often made a pragmatic decision not to aim for tight glycaemic control because they wanted to feel safe from hypoglycaemia, free from restrictions and to incorporate diabetes into their everyday life.

Retrospective data analysis over 3 years' experience of pump therapy has shown that HbA<sub>1c</sub> levels can continue to improve in the first 12 months but then remain constant (Kerr et al, 2008). By this time, quality-of-life has improved and pump management has been incorporated into normal daily life. It is important, therefore, to make every effort to reduce the HbA<sub>1c</sub> levels in people with type 1 diabetes using insulin pump therapy during the first 12 months. ■

Diabetes Control and Complications Trial Research Group (1993) The effect of intensive treatment of diabetes on the development and progression of long-term complications in insulin-dependent diabetes mellitus. *N Engl J Med* 329: 977–86

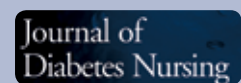
Kerr D, James J, Nicholls H (2008) Technologies as therapeutic devices. What do we expect from users of insulin pump therapy? *Infusystems International* 7: 1–4

NICE (2009) *Type 1 Diabetes: Diagnosis and Management of Type 1 Diabetes in Children, Young People and Adults in Primary and Secondary Care. Update, June 2009*. NICE, London

## The IMPROVE™ Control Campaign

The Global Task Force on Glycaemic Control is a group of physicians and specialists in the field of diabetes from around the world that is working in collaboration with Novo Nordisk with the ultimate aim of identifying and developing practical solutions to the global problem of poor glycaemic control in people with diabetes. Since early 2008, the *Journal of Diabetes Nursing* has featured articles and submissions under the banner of IMPROVE™ Control – a global public awareness campaign focused on the need for improved control, as part of the Task Force's work. Throughout 2010, the journal will continue to bring you articles on the barriers to good glycaemic control, and submissions from *you*, our readers, outlining the strategies you have used to help people with diabetes improve their control.

For example, perhaps you have implemented a new educational session in your area that has helped break down barriers to control, or maybe you have set up a new referral pathway that has helped improve HbA<sub>1c</sub> levels. The *Journal of Diabetes Nursing* would like to help you share your practical solutions for improving control, no matter how big or small, with other nurses working in diabetes. We encourage you to take part in this global initiative by calling 020 7627 1510, or emailing [jd@sbcommunicationsgroup.com](mailto:jd@sbcommunicationsgroup.com).



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