Carbohydrate counting and insulin dose adjustment – group education for people with type 2 diabetes

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At the Royal Derby Hospital there was an increasing number of people with type 2 diabetes on basal–bolus insulin regimens without any real education about how to match insulin doses to food. Individuals were often on large doses of insulin with little effect on blood glucose control, but great increases in weight.

NICE (2008) guidelines state that "group education is a more effective use of resources and may have additional benefits". Therefore, the diabetes team designed group education sessions, based on DAFNE (Dose Adjustment for Normal Eating) Study Group (2002) principles. However, as evidence for DAFNE is based on type 1 diabetes, adjustment was necessary for this population.

Aims and objectives

The aim of this programme was to provide information, in a group setting, about carbohydrate and insulin to empower people with type 2 diabetes who are on a basal–bolus insulin regimen to improve their diabetes control and quality of life.

Group sessions

For each group session, 8–10 people with type 2 diabetes, plus a relative or friend, were invited to attend. These are 2-hour group sessions run by a DSN and a diabetes specialist dietitian. There were five sessions at intervals of 1 or 2 weeks, followed by a sixth session 3 months later.

At each session, the following measurements were recorded:

- Weight.
- Height.
- Blood pressure.
- Insulin doses.
- HbA_{1c} level (only at sessions 1 and 6).

There are lesson plans for each session covering the following topics:

- What is type 2 diabetes?
- Carbohydrate counting.
- Insulin actions.
- Treatment of hypoglycaemia.
- Blood monitoring.
- Insulin dose adjustment.
- Weight control.
- Exercise.

Findings

Of the 37 people with comprehensive data, 31 (84%) initially had an HbA_{1c} level >8% (>64 mmol/mol). Upon repeat HbA_{1c} measurement at the last session, 22 participants (59%) showed improvement. The mean reduction in HbA_{1c} level was 0.96% (10.5 mmol/mol). Thirty participants (81%) were overweight (BMI >25 kg/m^2) initially. Weight reduction was observed in 22 people (73%) following session attendance, with a median weight loss of 3 kg.

A reduction in the total daily dose of insulin was seen in 24 participants (65%). The median dose reduction was 13 units. The average insulin dose reduction was 24 units, which translated to an average saving of £240 per person per year.

Conclusion

During group sessions, individuals had time to ask questions, listen to others and to learn at their own pace. Looking at other people's blood glucose results and insulin doses was a large part of the learning curve. Structured group education in people with type 2 diabetes on a basal–bolus insulin regimen was effective in improving glycaemic control, reducing insulin dose (leading to a cost saving) and reducing weight. ■

DAFNE Study Group (2002) *BMJ* **325**: 746

NICE (2008) *Type 2 Diabetes: The Management of Type 2 Diabetes*. 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 2011, 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_{1c} 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 jdn@sbcommunicationsgroup.com.