

## Group insulin starts for type 2 diabetes

*In this section, a panel of multidisciplinary team members give their opinions on a recently published diabetes paper. In this issue, the focus is on a study in which the authors assess the two approaches to insulin starts; group initiation and individual initiation.*



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**W**hat this paper shows is that insulin, metformin, and gliclazide are effective in controlling glycaemia, despite educational mode.

What the paper does not show is that there is any significant difference in methods of education or weight gain. It is most unfortunate that the design of the study could not and would not allow differences between group education and individual education to be confirmed or denied. Why was this?

From the devastating analysis of the PROactive study by Nick Freemantle (2005), we know that pre-defined secondary outcome measures should only be used for hypothesis setting and not for any conclusion from the study. In this study, the primary outcome was a difference in HbA<sub>1c</sub>; the secondary outcomes were varied but included differences in time spent by nurses between education methods; and weight gain in those assigned to group education. While they are quoted as being statistically significant, this is not the case in terms of being directly usable, other than suggesting an

important area for future investigation. This fact should have explained to the reader by the authors, reviewers and editors.

Furthermore, future studies comparing group education with individual education should not make the design mistakes present in this study.

First, it assumes that no previous education about the risks of hypoglycaemia or about diabetes and insulin had occurred despite the patients being on a sulphonylurea. This is clearly a paradox since sulphonylurea therapy gives approximately as much risk of hypoglycaemia as insulin. Second, it assumes that individually taught subjects all learn at the same rate, whereas in reality, people adapt at different rates. It is much more difficult to arrange such individualisation in group therapy.

Since insulin therapy needs to be at least as common as oral therapy, the most cogent place for this to be started and adjusted is in primary care: by primary care nurses supported by a specialist team (Burden and Burden, in press).

Burden ML, Burden AC (2007) Attitudes to starting insulin in primary care. *Practical Diabetes International* (In press)

Freemantle N (2005) How well does the evidence on pioglitazone back up researchers' claims for a reduction in macrovascular events? *BMJ* **331**: 836-8



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**T**he paper by Yki-Järvinen et al is useful for healthcare professionals who need a formal trial to reassure them that group insulin starts are effective. Tight glycaemic control was achieved whether people were

treated individually or in groups, and rates of symptomatic hypoglycaemia were no different. Interestingly, there was a greater increase in weight in those who started insulin in groups. Whether or not this was due to a greater opportunity for counselling on diet in those treated individually is unclear.

Two relevant issues around basal insulin therapy were not addressed in this trial. The first is the choice of insulin. Long-acting insulin

analogues don't lead to better glycaemic control than NPH when used as basal insulin replacement but do reduce the risk of hypoglycaemia slightly. Some centres use NPH from the start and then switch individuals who experience troublesome hypoglycaemia, while others will use a long-acting insulin analogue from the start.

The other important issue, of particular relevance to the UK, is where such therapy should be initiated. A group approach lends itself to insulin starts within the community and the demonstration that this saves time and therefore money is attractive to PCTs. Commissioning groups could pool resources to allow specially trained practice nurses, mentored by diabetes specialist nurses, to lead 'insulin start' groups for patients from a group of practices.

### *Initiate Insulin by Aggressive Titration and Education (INITIATE)*

Yki-Järvinen H, Juurinen L, Alvarsson M et al (2007) *Diabetes Care* **30**: 1364-9

#### DIABETES CARE

### Equal outcomes and reduced HCP time with group insulin starts for type 2

- 1 Lack of time and resources are often cited as reasons for not initiating insulin in type 2 diabetes, and so the authors of this study aimed to assess whether or not insulin could be initiated via group sessions.
- 2 In centres in Finland, The Netherlands, Sweden and the UK, 121 individuals with poorly controlled (stable SU dose and/or metformin  $\geq 1.5$ g for >6 months; HbA<sub>1c</sub>: 7-12%; BMI <45 kg/m<sup>2</sup>) type 2 diabetes over the age of 18 years were recruited to this study.
- 3 At their initial individual visit, the following were recorded: medical history; results of a physical examination; FBG test; HbA<sub>1c</sub>; sodium, potassium, creatinine and ALT concentrations; height; weight; blood counts; and electrocardiogram results.
- 4 Study participants were randomly assigned to either an individual or group education programme for basal insulin initiation in addition to their current oral medication. Mean group size was 5.3 individuals.
- 5 Two weeks before adding insulin to their medication regimen, participants met with a nurse in either a group or individual session for information about diabetes and its

treatment. They were asked to SMBG every morning and send the results to the treatment centre.

**6** On the day of initiation, participants were taught how to inject using an insulin pen and how to self-adjust dosage to achieve a target FPG.

**7** At 6, 12 and 24 weeks, participants discussed their FPG levels, dose adjustment, weight and HbA<sub>1c</sub> results. After 24 weeks, they completed treatment satisfaction questionnaires.

**8** In people who had one-to-one treatment, HbA<sub>1c</sub> decreased over 24 weeks from 8.65 ± 0.18% to 6.89 ± 0.14% (*P* = 0.001). In people who participated in group sessions, HbA<sub>1c</sub> decreased from 8.79 ± 0.20% to 6.81 ± 0.12% (*P* = 0.001). There was no significant difference in HbA<sub>1c</sub> improvement between the two arms.

**9** There was no significant difference between the number of symptomatic hypoglycaemic events: 3.5 (individual) and 3.1 (group) episodes per patient year.

**10** Mean weight gain was 1.5 kg greater in those participating in the group sessions (*P* < 0.02).

**11** Treatment satisfaction improved significantly in both groups and the difference in satisfaction with the two approaches was not significant.

**12** Adverse events not associated with the treatment were recorded in 49% of those attending individual sessions and 48% of those attending group sessions.

**13** The time spent by a HCP initiating insulin with the person with diabetes was 4.4 hours where they saw individuals and 2.3 where they taught in groups.

**14** The authors concluded that the two approaches to insulin initiation gave equal improvements in glycaemic control in people with type 2 diabetes, but group initiation of insulin reduces HCP time spent on this activity and thus depletes resources less.



Maureen Wallymahmed, Nurse Consultant, Liverpool

**I**t is well established that for most people with type 2 diabetes, glycaemic control deteriorates over time, and many will need insulin therapy if target HbA<sub>1c</sub> levels are to be achieved. This has resource implications, particularly for nurses and dietitians who spend a considerable amount of time educating people who are starting on insulin therapy. It was therefore with great interest that I read the study by Yki-Järvinen et al.

This study focuses on time spent starting patients with poorly controlled type 2 diabetes on once-daily insulin therapy and compares glycaemic control, body weight, lipid profile and treatment satisfaction in individuals randomised to either individual or group education sessions.

After 24 weeks, glycaemic control and treatment satisfaction improved significantly in both groups with no major episodes of hypoglycaemia. However, time spent initiating insulin in groups is reported to be almost 50% less than starting insulin on a one to one basis.

Group insulin starts have now become common practice in many centres in the UK. Advantages such as time-effectiveness, reduced waiting time to start insulin and increased interaction have been reported (Almond et al 2001, Wallymahmed and MacFarlane 2005). However, disadvantages have also been highlighted and include different learning styles and pace, and difficulty managing dominant or quiet people

within a group (Wallymahmed and Macfarlane 2005). Several surveys involving people attending our own clinic have revealed a preference for individual education sessions and patient choice should be considered. Some individuals may not wish to attend group insulin starts and, for others (such as those with learning disabilities, hearing deficits or mental health problems), one-to-one sessions may be the best option. Individual sessions can, to some extent, be arranged around the patients other commitments. Yki-Järvinen et al acknowledge that participation in the group arm required more time commitment from the patient than individual education. This may be an important factor for people who are working.

Weight gain in those who started insulin on an individual basis was significantly lower than those in the group arm. This is an important finding and warrants further investigation. It is unclear from the paper how frequently (if at all) individuals were reviewed by a dietitian.

In the current economic climate, appropriate use of resources is of paramount importance and this study demonstrates that starting insulin in groups is equally as effective and consumes fewer resources than individual sessions. Patient choice is also high on the political agenda; although, in reality, choice may be limited by the resources available. To meet the needs of each individual, both approaches are justified in clinical practice.

Almond JM, Cox D, Nugent M et al (2001) Experience of group sessions for converting to insulin. *Journal of Diabetes Nursing* 5: 102-5

Wallymahmed M, Macfarlane I (2005) The value of group insulin starts in people with type 2 diabetes. *Journal of Diabetes Nursing* 9: 287-90

***'In the current economic climate, appropriate use of resources is of paramount importance'***

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