**Insulin adjustment by a diabetes nurse educator improved glucose control in patients with poorly controlled, “insulin requiring” diabetes**


**QUESTION:** Does regular telephone advice by a diabetes nurse educator for insulin adjustment improve glucose control in patients with poorly controlled, “insulin requiring” diabetes?

**Design**
Randomised (allocation concealed), blinded (outcome assessor), controlled trial with 6 months of follow up.

**Setting**
Hospital diabetes clinic in Vancouver, British Columbia, Canada.

**Patients**
46 patients with diabetes (mean age 49 y, 52% women) who had a glycated haemoglobin (HbA1c) levels ≥8.5%, were on insulin therapy, had received standard diabetes education, were able to monitor blood glucose levels at home, and were receiving care by an endocrinologist. Exclusion criteria were inability to have regular telephone communication, contraindication to tight glucose control, other serious illness, or use of an insulin pump. Follow up was 100%.

**Intervention**
Patients were allocated to receive regular telephone contact with a diabetes nurse educator for advice about adjustment of insulin therapy (nurse telephone intervention, n = 23) or to continue regular clinic visits and usual contact with the endocrinologist for insulin adjustment (standard care, n = 23). Patients in the nurse telephone intervention group received about 3 telephone calls per week, each of about 15 minutes duration.

**Main outcome measures**
Mean HbA1c level and proportion of patients in each group who achieved a reduction in HbA1c level of ≥10%.

**Main results**
At 6 months, compared with patients who received standard care, those who received the nurse telephone intervention had a lower mean HbA1c level (8.3% vs 7.8%), p < 0.01. A higher proportion of patients in the nurse telephone intervention group had a reduction in HbA1c of ≥10% (p < 0.001) (table).

**Conclusion**
Regular telephone advice on insulin adjustment by a diabetes nurse educator improved glucose control in patients with poorly controlled, “insulin requiring” diabetes.

**COMMENTARY**

There is a need to expand the evidence base that examines the role of diabetes nurse educators. Although insulin adjustment by telephone advice is an integral part of the diabetes nurse educator’s role, evaluation of this intervention is lacking.

This study by Thompson et al is well designed. It is a randomised controlled trial, includes 6 months of follow up data on all patients who began the study, and avoids bias by ensuring that the laboratory technicians determining the HbA1c levels were blinded to the patients’ group assignment. Although we are given some information about the patients in the study, we do not know their ethnic background and socioeconomic status, which may influence the generalisability of the study findings. With respect to generalisability, it is also important to note that the telephone counselling was done by only 1 experienced nurse who was responsible for a small number of patients. The authors acknowledge that it is possible that the nurse was uniquely qualified and that the same results may not be achieved with larger numbers of patients or with nurses with different training, experience, or characteristics. However, the study findings are consistent with other studies evaluating regular telephone contact with nurses.

The study findings have huge resource implications for diabetes nursing (the telephone advice for the 25 patients in the intervention group took approximately 17 h/week of nursing time). However, both the Diabetes Control and Complications Trial4 and the United Kingdom Prospective Diabetes Study5 showed that good glycaemic control is associated with a decreased risk of long term macrovascular and microvascular diabetes complications, and that even lowering the HbA1c level by 1% makes a difference. Given the potential for long term cost saving effects of this expensive intervention, a proper cost effectiveness analysis is warranted.

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*Abbreviations defined in glossary; RBI, NNT, and CI calculated from data in article.*

<table>
<thead>
<tr>
<th>Outcome at 6 mo</th>
<th>Intervention</th>
<th>Standard care</th>
<th>RBI (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reduction in HbA1c level of ≥10%</td>
<td>87%</td>
<td>35%</td>
<td>150% (50 to 369)</td>
<td>2 (1 to 4)</td>
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Source of funding: Eli Lilly and Co.

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