Overall satisfaction increased more with inhaled insulin than with subcutaneous insulin in type 1 diabetes


QUESTION: In patients with type 1 diabetes mellitus, is patient satisfaction greater with inhaled insulin use than with subcutaneous insulin injection?

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Inhaled v subcutaneous insulin in type 1 diabetes at 12 weeks§

<table>
<thead>
<tr>
<th>Outcomes</th>
<th>Mean percentage increase from baseline</th>
<th>Difference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall satisfaction</td>
<td>35%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>25% (6.6 to 43)</td>
<td></td>
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<tr>
<td>Convenience or ease of use</td>
<td>41%</td>
<td>11%</td>
</tr>
<tr>
<td></td>
<td>30% (11 to 50)</td>
<td></td>
</tr>
<tr>
<td>Social comfort</td>
<td>28%</td>
<td>18%</td>
</tr>
<tr>
<td></td>
<td>10% (1.15 to 35)</td>
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§Outcomes measured with Patient Satisfaction with Insulin Therapy Questionnaire; higher score = greater satisfaction.
*Calculated from data in article.

COMMENTARY

The core finding in the study by Geber et al was a greater improvement in overall satisfaction among patients receiving inhaled plus 1 subcutaneous injection of insulin than among those continuing 2 or 3 daily injections of insulin. Details of the insulin regimens are sparse, but patients received a mixture of short acting and medium acting conventional insulins. Whether these were pre-mixed preparations or how they were administered is not clear. These questions are not trivial because many patients with type 1 diabetes find it inconvenient to draw up 2 different insulins into the same syringe. Moreover, once a medium acting preparation is injected at breakfast, the patient is committed to consuming a meal several hours later. Current advice is that conventional, short acting insulins should be given 20 to 30 minutes before eating. Finally, many patients report that insulin pens and their needles are much more portable and less painful than disposable syringes.

Comparing inhaled insulin that is given immediately before meals and uses a new technology (a new treatment that interested patients enough to enrol in a study) with a less convenient regimen was likely to result in greater satisfaction. What is surprising is the almost 11% overall increase in satisfaction in those continuing subcutaneous injections. However, this study was not large enough to show differences in social comfort in users of the bulky insulin inhaler, but the beneficial trend is consistent with a previous study.1

Other problems exist with inhaled insulin. In dose equivalence terms, 10 times more insulin needs to be given before meals with the inhaler than with injection. Short-term respiratory function reported in this study did not change, and preliminary data suggest no detectable problems at 24 months. However, longer term surveillance is essential.

To appropriately test the hypothesis that inhaled insulin is more acceptable to patients, a crossover trial comparing it with multiple injection treatment using fast acting analogues in patients with good glycaemic control (perhaps < 8% glycated haemoglobin value) needs to be done.

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