Pharmacist led, primary care based disease management reduced risk factors and improved glycaemic control in diabetes


Clinical impact ratings GP/FP/Primary care ★★★★★★★★ Internal medicine ★★★★★★★★ Cardiology ★★★★★★★★★★ Endocrine ★★★★★★★★★★

In vulnerable patients with poorly controlled type 2 diabetes mellitus, does a pharmacist led, primary care-based, disease management programme reduce cardiovascular risk factors and improve glycaemic control?

METHODS

Design: randomised controlled trial.

Allocation: [concealed]\t.

Blinding: blinded (outcome assessors and data collectors). 

Follow up period: 1 year.

Setting: University of North Carolina General Internal Medicine Practice, Chapel Hill, North Carolina, USA.

Patients: 217 English speaking patients who were ≥18 years of age, had a clinical diagnosis of type 2 diabetes, had poor glucose control (glycated haemoglobin [HbA1c] concentration >8.0%), and had a life expectancy >6 months.

Intervention: primary care disease management programme (n=112) or usual care (n=110). The intervention consisted of usual care supplemented with intensive diabetes management; 3 clinical pharmacists who had training in outpatient disease management delivered intensive educational sessions and used evidence-based algorithms and proactive management of clinical parameters. See www.evidence-basedmedicine.com.

Outcomes: blood pressure (BP), HbA1c concentrations, aspirin use, and lipid concentrations.

Patient follow up: 89% at 1 year (intention to treat analysis).

*See glossary.
†Information provided by author.

MAIN RESULTS

Systolic and diastolic BP, HbA1c concentrations, and aspirin use for cardiovascular risk prevention were more improved in patients who received the primary management programme than in those who received usual care (table). Cholesterol concentrations did not differ significantly between groups.

CONCLUSION

In vulnerable patients with poorly controlled type 2 diabetes mellitus, a pharmacist led, primary care-based, disease management programme reduced cardiovascular risk factors and improved glycaemic control.

Pharmacist led, primary care management programme v usual care in type 2 diabetes*

<table>
<thead>
<tr>
<th>Outcomes at 1 year</th>
<th>Mean change from baseline</th>
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<tbody>
<tr>
<td>Programme</td>
<td>Usual care</td>
</tr>
<tr>
<td>Systolic BP (mm Hg)</td>
<td>-7</td>
</tr>
<tr>
<td>Diastolic BP (mm Hg)</td>
<td>-4</td>
</tr>
<tr>
<td>HbA1c</td>
<td>-2.5%</td>
</tr>
<tr>
<td>Total cholesterol (mg/dl)</td>
<td>-27</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Programme</th>
<th>Usual care</th>
<th>RBI (CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin use</td>
<td>91%</td>
<td>58%</td>
<td>56% (32 to 91)</td>
</tr>
</tbody>
</table>

*HbA1c = glycated haemoglobin; BP = blood pressure. Other abbreviations defined in glossary; RBI, NNT, and CI calculated from data in article.
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INTERVENTION DETAILS

Pharmacist led, primary care-based disease management programme

Three clinical pharmacists who worked within general medicine practice and had training in outpatient disease management delivered the intervention. Two of these pharmacists were certified diabetes educators.

The intervention consisted of

- intensive education and counselling; and
- medication management: evidence-based treatment algorithms were used to reduce cardiovascular risk factors and improve glycaemic control. These algorithms pertained to the use of medication to lower blood pressure, cholesterol, and glucose and are available on the web ([www.med.unc.edu/medicine/edursrc/algor.htm](http://www.med.unc.edu/medicine/edursrc/algor.htm)).

All medication adjustments were done with the approval of the patient's primary care provider.

The intervention group also had access to a diabetes care coordinator who was trained by the clinical pharmacists to address issues of health behaviour and health education. The coordinator telephoned patients to remind them of appointments and to assess whether further interventions were needed. Barriers to care (eg, transportation difficulties, communication issues, insurance problems, and low health literacy) were also addressed by the coordinator.