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


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 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.

**Commentary**

Rothman et al add to the literature on models of disease care management that empower health professionals other than primary care physicians with standardised guidelines and procedures. These professionals (pharmacists in this intervention) are responsible for tracking, coordinating, and implementing individualised patient care.

What could limit adoption of these models? Firstly, as in other guideline implementation efforts,1 2 these models yield modest improvements. Secondly, if protocols are not sufficiently explicit and unambiguous, non-physician professionals may be challenged for extending their ‘scope of practice.’ Thirdly, successful translation requires system redesign to support new roles and detailed protocols to ensure adequate implementation.

Also, a wider scope of intervention, beyond monitoring and medication adjustment, may be more effective. Notably, supporting patient self efficacy and problem solving by using family and peer counselling and other psychosocial interventions can lead to healthier behaviours3 that may enhance patient outcomes.

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**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>
<th>Programme</th>
<th>Usual care</th>
<th>Difference (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Systolic BP (mm Hg)</td>
<td>–7</td>
<td>&lt;2</td>
<td>–9 [–16 to –3]</td>
<td></td>
</tr>
<tr>
<td>Diastolic BP (mm Hg)</td>
<td>–4</td>
<td>&lt;1</td>
<td>–5 [–9 to –1]</td>
<td></td>
</tr>
<tr>
<td>HbA1c</td>
<td>–2.5%</td>
<td>–1.6%</td>
<td>–0.8 [–1.7 to 0]</td>
<td></td>
</tr>
<tr>
<td>Total cholesterol (mg/dl)</td>
<td>–27</td>
<td>–12</td>
<td>–15 [–35 to 4] (Not significant)</td>
<td></td>
</tr>
</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.