Nurse led clinics controlled hypertension and hyperlipidaemia better than usual care in diabetes


In patients with diabetes and high blood pressure (BP) or high cholesterol, is a nurse led hypertension or hyperlipidaemia clinic more effective than usual care for controlling BP and lipid concentrations?

METHODS

Design: randomised controlled trial.
Allocation: concealed.
Blinding: data collectors (and data analysts)*.
Follow up period: 1 year.
Setting: Hope Hospital, Salford, UK.

Patients: patients with diabetes mellitus who were receiving shared care provided by a general practitioner and hospital diabetes clinic and had elevated BP (systolic >140 mm Hg or diastolic >80 mm Hg) or elevated serum cholesterol concentrations (total cholesterol >5.0 mmol/l). 1014 patients (mean age 64 y, 52% men) were enrolled in the BP control protocol, and 683 patients (mean age 57 y, 54% men) in the lipid management protocol.

Interventions: patients with elevated BP were allocated to a nurse led hypertension clinic (n = 506) or usual care (n = 508), and patients with elevated cholesterol were allocated to a nurse led hyperlipidaemia clinic (n = 345) or usual care (n = 338). Nurse led clinic care involved checking medications; measuring BP or lipid concentrations; assessing lifestyle factors such as diet and exercise; and determining patients’ willingness to change. Patients attended clinics every 4–6 weeks until target levels were achieved. Doses of antihypertensive and cholesterol lowering drugs were titrated according to a local protocol.

Outcomes: proportions of patients achieving target BPs (<140/<80 mm Hg) and lipid concentrations (<5.0 mmol/l). Secondary outcomes included all cause mortality.

Patient follow up: 82% for the BP control protocol and 92% for the lipid management protocol.

*Information provided by author.

MAIN RESULTS

Overall, more patients allocated to nurse led clinics reached target BPs and lipid concentrations (table). Analysis of only patients with hyperlipidaemia showed that more patients allocated to nurse led clinics reached target lipid concentrations (table). For patients with hypertension, the groups did not differ (table). Fewer patients who attended nurse led clinics died (table).

CONCLUSION

In patients with diabetes and high blood pressure (BP) or high cholesterol, nurse led hypertension or hyperlipidaemia clinics were more effective than usual care for achieving target BPs and lipid concentrations.

Commentary

Reducing hypertension and hyperlipidaemia in patients with diabetes have been shown to reduce morbidity and mortality from cardiovascular events. The study by New et al considers the effectiveness of specialist nurse led interventions in achieving targets recommended by NICE and the National Service Framework for diabetes.

Study patients were all from Salford, an inner city area with high levels of social deprivation, a fact that the authors acknowledge could have affected attendance: 16% of patients with hyperlipidaemia and 41% of patients with hypertension did not attend the nurse led clinic to which they were randomised, but returned to usual care. If they returned for annual review appointments, their results were included in the analysis.

Although more patients in the nurse led clinics achieved target BPs and lipid concentrations, results for hypertension alone were not significant. This result could have been influenced both by the high non-attendance rate in the intervention group and the four monthly education sessions offered to general practitioners and practice nurses providing care to patients in the usual care group.

Mortality was substantially reduced in the combined intervention group. This result could have been partly because the usual care group included more patients with a history of myocardial infarction or cerebrovascular disease, a group that is already at higher risk of mortality. The results of this study are relevant to practice nurses, diabetic specialist nurses, and anyone providing education and pharmacological intervention to patients with diabetes. The findings add to a growing body of evidence that emphasises the importance of intensive programmes of care to assist patients in achieving recommended treatment targets, particularly when multiple risk factors are involved.

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Nurse led blood pressure (BP) and lipid clinics v usual care for patients with diabetes*

<table>
<thead>
<tr>
<th>Outcomes at 1 year</th>
<th>Patient group</th>
<th>Nurse led clinic</th>
<th>Usual care</th>
<th>RRR (95% CI)</th>
<th>NNT (CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BP and lipid targets achieved</td>
<td>All patients</td>
<td>37%</td>
<td>31%</td>
<td>21% (6 to 29)</td>
<td>16 (10 to 49)</td>
</tr>
<tr>
<td>BP targets achieved</td>
<td>Hypertension</td>
<td>27%</td>
<td>24%</td>
<td>11% (–10 to 37)</td>
<td>Not significant</td>
</tr>
<tr>
<td>Lipid targets achieved</td>
<td>Hyperlipidaemia</td>
<td>53%</td>
<td>40%</td>
<td>27% (7.9 to 50)</td>
<td>10 (6 to 29)</td>
</tr>
<tr>
<td>Mortality</td>
<td>All patients</td>
<td>3.2%</td>
<td>5.7%</td>
<td>44% (8 to 66)</td>
<td>40 (21 to 271)</td>
</tr>
</tbody>
</table>

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

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