MEDICINE DIGEST

COMMUNITY PHARMACISTS IN THE FRONT LINE

The community pharmacist is local, accessible and, therefore, potentially a key player in successful management of Type 2 diabetes. A new pilot study reveals how pharmacy-led intervention can produce real benefit for people with diabetes

The community pharmacy is often a useful resource of advice and support for people with Type 2 diabetes. Indeed, the average diabetes patient is known to visit the pharmacist between three to eight times more often than other patients. This creates various opportunities for community pharmacists to play an important role in the management of diabetes and its complications. For instance, the community pharmacist can:

- offer programmes for monitoring therapeutic interventions
- improve compliance with medication, eg by addressing these issues through Medicines Use Reviews and the New Medicines Service
- educate the person with diabetes about lifestyle changes.

Much of the existing evidence regarding the success of community pharmacy intervention in diabetes management comes from the USA. There is therefore a need for studies that can demonstrate the benefits of the community pharmacy-led extended Type 2 diabetes care model in a UK setting.

A community pharmacy study

Majid Ali of the School of Pharmacy at the University of Hertfordshire, and colleagues, have carried out a randomised trial which shows the impact of a community pharmacist-led intervention programme on diabetes management. The pilot study, which involved 48 people with Type 2 diabetes, was carried out at two branches of Manor Pharmacy, based in Letchworth and Harpenden. The participants were randomised so that they received either the intervention or usual care over a 12-month period.

The researchers assessed the impact of the intervention on diabetes management by measuring the participants' HbA1c, body mass index (BMI), blood pressure, blood glucose and lipid profile.

The pharmaceutical care package

Participants assigned to the intervention group received a pharmaceutical care package that was specifically designed for people with Type 2 diabetes. The community pharmacist saw them every month for the first two months, then every three months for the rest of the study period (a total of six appointments). Blood pressure, BMI and blood glucose were measured at each visit, while HbA1c and lipid profile were assessed at months 0, 5 and 12. The measurements were carried out by three pharmacists at the two Manor Pharmacy branches and a part-time nurse practitioner.

The participants also completed the following questionnaires at the beginning and end of the study:

- Diabetes Quality Of Life Brief Clinical Inventory
- Satisfaction With Information Received About Medicines
- Beliefs About Medicines
- Health Status
- Diabetes Knowledge Test.

In addition to the pharmaceutical care package and the consultation and monitoring, the participants also received a targeted medicine use review and lifestyle modification counselling, where these were appropriate.

The pharmacists prepared for this study with an eight-hour training programme that was provided by the University of Hertfordshire's School of Pharmacy. This involved workshops with a consultant diabetologist and a diabetes specialist nurse in order to update the pharmacists on diabetes management and referrals. Training sessions also gave an overview of the use of diagnostic equipment and the data collection forms.

Participants in the control group received standard care from their GP, practice nurse and community pharmacist. They were seen by the pharmacist at the beginning and end of the study, when the clinical measurements listed above were taken. They also completed the listed questionnaires. Both groups of patients used diabetes record books, in which they were to note the outcome of their appointments, as well as any emergency hospital visits or admissions, and any possible hypoglycaemic or hyperglycaemic episodes.

Study outcomes

The primary outcome in this study was glycaemic control measured by HbA1c. Analysis of patient characteristics showed little difference between the two groups. The mean age of participants was 66.4 years in the intervention group and 66.8 years in the control group, with mean duration of Type 2 diabetes being 7.5 and 6.8 years, respectively. Half of the participants were newly or recently diagnosed with Type 2 diabetes. All were white, with the exception of two South Asian patients in the control group.

At 12 months, significant reductions in HbA1c, blood glucose and systolic blood pressure were found in the intervention group, but not in the control group. HbA1c had fallen from 66mmol/mol (8.2 per cent) to 49mmol/mol (6.6 per cent) in the intervention group, compared with a reduction from 65mmol/mol (8.1 per cent) to 59mmol/mol (7.5 per cent) in the control group. Blood glucose fell from 8.8 to 6.9mmol/l in the intervention group, but there was no significant change in the controls. Blood pressure fell from 146/87 to 126/81mm Hg in the intervention group compared with no significant change in the control group (136/86 to 139/82mm Hg). The decrease in diastolic blood pressure did not reach significance in either group.

The community pharmacist can help people with diabetes get the most out of their medicines

> "At 12 months, significant reductions in HbA1c, blood glucose and systolic blood pressure were found in the intervention group, but not in the control group"

The researchers also noted non-significant reductions in BMI (30.8 to 27kg/m^2) in the intervention group, compared with no significant change in the control group. The lipid profile changes were mixed, with triglycerides

Compliance with medication can be improved through the Medicines Use Review and the New Medicines Service

being non-significantly lower in the intervention group, while low density lipoprotein (LDL), high density lipoprotein (HDL) and total cholesterol were, by contrast, significantly higher. These last findings warrant further investigation.

When it came to questionnaire results, the intervention group showed significant improvements in all measures, compared with the control group, except for diabetes-related quality of life which improved non-significantly. While there were no emergency hospital visits or admissions recorded by any of the participants, there were 18 hypoglycaemic and 10 hyperglycaemic episodes recorded by those in the control group during the study period. In the intervention group, there were five hypoglycaemic episodes recorded and no hyperglycaemic episodes. Finally, no significant difference in the use of diabetes and cardiovascular medicines between the two groups was noted, both at baseline and after 12 months.

Pharmacist intervention does work

The pilot study of Ali et al shows that a community pharmacy-led intervention can achieve clinically and statistically significant improvements in both glycaemic control and blood pressure for people with Type 2 diabetes. Moreover, acceptance of the programme among the participants was high. The researchers also note that the improvements were attained with little or no increase in either additional or newly prescribed medicines. This suggests that improved compliance with existing medication, and with lifestyle changes, is the mechanism underlying the benefits gained from the intervention.

The findings are consistent with those from other studies of community pharmacy-led interventions. For instance, a study from the USA showed significant improvement in glycaemic control over six months, but no impact on blood pressure or body weight. A randomised controlled trial of pharmacist interventions, by telephone and face-to-face over 12 months, showed a significant reduction in HbA1c from 58mmol/mol (7.5 per cent) to 53mmol/mol (7.0 per cent). Finally, the Ashville Project showed significant improvements in glycaemic control, blood pressure and LDL, as well as cost savings, following community pharmacy interventions. Other studies have shown that such interventions can lead to significant improvements in lipid profile.

Study limitations

The researchers point out that their study did have some limitations. It achieved only partial target recruitment. This may have resulted from an inclusion requirement of HbA1c ≥ 53mmol/mol (7 per cent) and the study taking place in a part of the country where diabetes care is actually very good. Moreover, the study population was largely white and further work is clearly needed among ethnic minority communities. Longer-term studies would also be required to see whether or not the improvements observed here can be sustained.

The future

The National Diabetes Audit Report 2009–2010 suggested that a majority of people with diabetes in England and Wales do not receive the expected standard of care. This fact, together with the current structural changes in the NHS, brings the potential role of the community pharmacist in managing long-term conditions to the forefront. This study shows that a pharmaceutical care package delivered within the community pharmacy setting can improve diabetes management. It therefore suggests that redesigning the patient pathway in diabetes to include intervention by the community pharmacist may be of great benefit. In the future, this could even include a role for the pharmacist in early detection, given that there are more than 6 million visits to UK pharmacists every day. Screening in the pharmacy could potentially reach many people who do not regularly visit their GPs.

> “...improvements were attained with little or no increase in either additional or newly prescribed medicines”

In conclusion, the study by Ali et al shows how community pharmacy intervention can improve the management of Type 2 diabetes. The benefits translate to improved adherence to medication, reduced co-morbidities and increased patient satisfaction, all of which will improve quality of life for people with Type 2 diabetes. The study did make clear the need for better communication between healthcare professionals – which may be driven forward by recent joint work between the Royal Pharmaceutical Society and the Royal College of General Practitioners.

This is a digested version of Ali M, Schifano F, Robinson P et al (2012). Impact of community pharmacy diabetes monitoring and education programme on diabetes management: a randomized controlled study. *Diabetic Medicine* 29;e326-e333. To download the article, go to http://onlinelibrary.wiley.com/doi/10.1111/j.1464-5491.2012.03725.x/pdf.

• See also Care Delivery, page 40.