



Polypharmacy in diabetes and solutions for greater adherence

Introduction

Polypharmacy is a term that has been around for at least two decades. It can mean taking many drugs; however, this underestimates the numerous problems associated with polypharmacy which itself could lead to poor diabetic control. The traditional meaning is when various drugs are prescribed and administered, more than are clinically necessary or when a medical regimen includes unnecessary drugs.

However, when describing polypharmacy, over-the-counter (OTC) medicines should also be taken into account. These include herbal products, such as DB Care, which are used in the South Asian community for diabetes. In addition, as medicines can be bought over the internet the polypharmacy problem could be a lot worse than initially estimated. However, the real problem of polypharmacy can really only be understood if the clinician is aware of the cultural background of the patient and has knowledge of the different sources available for the patient to obtain medicines.

Polypharmacy and diabetes

Polypharmacy in diabetes is unavoidable. Poor diabetic control leads to polypharmacy.¹ Due to the progressive nature of diabetes a range of complications such as hypertension, neuropathy, dyslipidaemia and depression can also exist, leading to the administration of many medicines. The typical person with type 2 diabetes and hypertension could be taking up to 10 tablets daily.

The risk of polypharmacy can no longer just be associated with the ageing population as the age of onset for type 2 diabetes in the South Asian population is at least 10 years earlier than that of the indigenous population.² Polypharmacy will lead to complex medicine regimens and adverse drug reactions.³ Sometimes, the latter are mistaken for new medical conditions requiring extra treatments, thus adding to the

polypharmacy problem. In the current climate, with more allied health care professionals such as pharmacists, dietitians and nurses now being able to prescribe, the risk for polypharmacy increases greatly if re-evaluation of medicines is not conducted regularly.⁴

Adherence problems

It is well documented that patients on complex regimens find it difficult to adhere to them. A study in Tayside found that only 13% of patients receiving combination therapy adhered to their oral hypoglycaemic drug regimen. Both complex regimens and combination therapy were factors in poor adherence. However, patients failed to comply, either deliberately or by accident, which highlights two problems: that patients need to understand the value of the treatment and that they must be encouraged to be motivated and interested in their treatments.⁵ Patients will rarely volunteer that they have poor adherence unless determinedly asked by the prescriber. There has now been a move away from compliance reviews of patients' medication to concordance. It is a joint approach discussion that ensures both parties are taking part in the decision-making process. The patient-prescriber relationship is crucial and should be one based on rapport, trust and effective communication. Establishing a successful relationship with the patient will then allow equal decision making to be made. The secret of building rapport with the patient is to understand the wider culture which the patient is immersed in and comes from.

Global problem

It is well documented that poor compliance exists in those populations with chronic conditions.⁶ Articles from around the globe all express the same message of the problems with adherence and polypharmacy. The conclusions given in each article vary slightly and reflect the delivery and

progress of their own health system. Research from Germany has suggested that doctors should think about the problems of polypharmacy before prescribing and took into account OTC medicines that would also add to the load of polypharmacy.⁷

In Slovakia, research has focused on inpatient diabetes care issues, a very topical issue in the UK. The conclusion was that elderly people who have chronic conditions such as diabetes need to have their medication re-evaluated carefully as there was the tendency to be sent home with more tablets than they came in with.⁸

In Jamaica, a study of those aged over 14 has looked at adherence and polypharmacy, reflecting the problems associated with obesity in children and the occurrence of type 2 diabetes. The polypharmacy there came not only from traditionally prescribed medicines but also from the local remedies that many of the patients take. A mix and match attitude exists to their medicine taking; however, this is not limited to the West Indies. South Asians are also well known to seek advice and administer drugs prescribed by their Hakim (pharmacist/doctor) when they go back home.⁹

A study over a period of seven years from Mexico showed that there was an inconsistent use of diabetes medications. This was associated with increased risk of renal, eye and circulatory problems.¹⁰

So what are the solutions?

Solutions: simpler regimen

The Tayside study⁵ suggested that the regimen of patients with diabetes be simplified by giving them tablets which only require once-daily dosing and by using modified release and fixed combination drug preparations. The investigators also suggested that clinicians need to continually update their knowledge base and ensure they learn new skills such as counselling and motivational interviewing.

However, what about the question of education in diabetes? There are many courses available for patients,



Polypharmacy in diabetes

delivered by a range of health care professionals such as nurses, dietitians and pharmacists. These courses are normally for newly-diagnosed patients but should also be made available to those patients who have had diabetes for a long time, as it will be the latter who will have polypharmacy issues. It is important to remember to include those people for whom English is not their first language. This used to apply in particular to the South Asian population; however, with the increase in the number of Eastern Europeans in the UK, we need to ensure that diabetes education is available to all. Patients should have knowledge and a true understanding of why they are prescribed their medication, as well as having the opportunity to speak to someone about their medication in a language they understand.

Increase the use of pharmacists

It is crucial to ensure that patients understand what each drug is for. When changes are made to patients' medication they need to understand that they no longer require the old medication and should understand the rationale behind starting the new medication. One of the best-placed health care professionals (and under-utilised for their knowledge), who can conduct medicine reviews, are pharmacists. They have the time and the pharmacological knowledge to be able to deliver the education and information at a level that the patient is able to understand. A study in Spain showed the effect of pharmacy intervention on polypharmacy and improved outcomes for the patients. There were also considerable cost savings due to the interventions by the pharmacist.¹¹

Clinical pharmacists in both primary and secondary care can ensure that patients with diabetes are offered appropriate treatments that are being monitored and are achieving their optimal treatment targets. Successful study circles, where specially trained pharmacists delivered patient education for diabetes, were run in Swedish pharmacies over the period of one year. Patients were taught how to self-monitor blood glucose, interpret results and act upon them. The researchers found

that group setting promoted learning through peer help and also provided emotional support for the patients.¹²

A pharmacist-led diabetic clinic involves the patient being seen by the pharmacist, instead of the clinician, for routine diabetes management including education, medication review and alteration of dose. There are recent examples of pharmacist-led diabetic clinics in the north of England.¹³ With the introduction of supplementary and independent prescribing for pharmacists, this new role could add more solutions to the problems of adherence and polypharmacy.

Another simple and effective solution for polypharmacy was demonstrated by a study in the USA which showed that simple interventions, such as writing instructions and displaying information on graphs, enabled a reduction in the number of drugs being prescribed. The authors felt that an even more complex intervention regimen would enable further reductions in polypharmacy.¹⁴

Conclusions

Polypharmacy – the taking of many drugs – in diabetes is a global phenomenon and is addressed in varying ways by different countries. In the UK, using a simple regimen for patients – who can be on more than 10 medications – is suggested. In addition, once-daily and modified release preparations, as well as fixed combination drug preparations, would also be an option. Improving communication skills and having a joint approach with the patient to decision making for their medication regimen will help to reduce the polypharmacy issues. Ensuring patients have participated in an education programme in a language that they understand is crucial. Finally, involving the pharmacist, especially with a view to independent prescribing, is another solution to reduce the increased problems of polypharmacy.

Lubna Kerr, PhD, MRPharmS,
Diabetes Specialist Pharmacist,
Lothian NHS, UK;
e-mail: lubnakerr@talk21.com

References

References are available at www.practicaldiabetesinternational.com.



References

1. Willey CJ, Andrade SE, Cohen J, *et al*. Polypharmacy with the oral antidiabetic agents: an indicator of poor glycaemic control. *Am J Manag Care* 2006; **12**(8): 435–440.
2. Nicholl CG, Levy JC, Mohan V. Asian diabetes in Britain: a clinical profile. *Diabetic Med* 1986; **3**: 257–260.
3. Tinnett ME, Boardus ST, Agostini JV. Potential pitfalls of disease-specific guidelines for patients with multiple conditions. *N Engl J Med* 2004; **351**: 2870–2874.
4. Austin RP. Polypharmacy as a risk factor in the treatment of type 2 diabetes. *Diabetes Spectrum* 2006; **19**: 13–16.
5. Emslie-Smith A, Dowall J, Morris A. The problem of polypharmacy in type 2 diabetes. *Br J Diabetes Vasc Dis* 2003; **3**: 54–56.
6. Grant RW, Devita NG, Singer DE, *et al*. Polypharmacy and medication adherence in patients with type 2 diabetes. *Diabetes Care* 2003; **26**: 1408–1412.
7. Junius-Walker U, Theile G, Hummers-Pradier E. Prevalence and predictors of polypharmacy among older primary care patients in Germany. *Fam Pract* 2007; **24**(1): 14–19.
8. Wawruch M, Zikavzka M, Wsolova L, *et al*. Polypharmacy in elderly hospitalised patients in Slovakia. *Pharm World Sci* 18 Oct 2007.
9. Delgoda R, Ellington C, Barrett S, *et al*. The practice of polypharmacy involving herbal and prescription medicines in the treatment of diabetes mellitus, hypertension and gastrointestinal disorders in Jamaica. *West Indian Med J* 2004; **53**(6): 400–405.
10. Kau Y, Raji M, Markides K, *et al*. Inconsistent use of diabetes medications, diabetes complications, and mortality in older Mexican Americans over a 7-year period. *Diabetes Care* 2003; **26**: 3054–3060.
11. Chumney EC, Robinson LC. The effects of pharmacist interventions on patients with polypharmacy. *Pharmacy Pract* 2006; **4**(3): 103–109.
12. Sarkadi A, Rosenqvist U. Study circles at the pharmacy – a new model for diabetes education in groups. *Patient Educ Couns* 1999; **37**: 89–96.
13. Tadros L, Ledger-Scott M, Barnes E. The benefits of a pharmacist led type 2 diabetic clinic. *Hosp Pharmacist* 2002; **9**: 204–206.
14. Myers L, Midence K. Concepts and issues in adherence. In *Adherence to Treatment in Medical Conditions*. Myers L, Midence K (eds). London: Harwood, 1998.