Deprescribing: tackling increasing polypharmacy

JANET KRSKA, RACHEL HOWARD AND NINA BARNETT

“Deprescribing – is less more?” was the theme of this year’s annual scientific meeting organised by the Prescribing and Research in Medicines Management (PRIMM) group, held in London in January. The meeting covered a range of topics relating to deprescribing, including a seven-step deprescribing model, identifying patients with polypharmacy problems, and providing individualised prescribing.

Deprescribing, defined as “the supervised withdrawal of inappropriate medicines,” is increasingly advocated as a response to the rising tide of multiple medicines use in individuals (polypharmacy). Around half the population of England take at least one medicine and more than a third of those aged 75 years or over take at least four. In 2010, a Scottish study found that 5% of people were taking 10 or more regular medicines. In England in 2015/16, 995.3 million prescriptions were dispensed by pharmacies, an increase of 45% compared with 2006/07, and a further 84.6 million dispensed by GPs, suggesting an ever-increasing trend of polypharmacy.

Guidelines are a major driver for this trend but, if slavishly followed, individual patients with multimorbidity then have an increased risk of drug-drug interactions, adverse drug reactions and poor adherence. These all contribute to poorer clinical outcomes. In addition, polypharmacy creates an increased burden for the patient (and/or their carer) whose time and effort must go into organising supplies and mechanisms for remembering to administer medicines and monitor the outcomes.

The King’s Fund report published in 2013 suggested that polypharmacy could be divided into “appropriate” and “problematic”, where problematic polypharmacy was defined as when “multiple medications are prescribed inaccurately, or where the intended benefit of the medication is not realised.” It has been argued that this report, as well as the more recent NICE guideline on medicines optimisation, is primarily based on the biomedical perspective.

Reasons for deprescribing

For a patient, medication appropriateness relates to broader issues including psychosocial aspects, day-to-day experiences of managing their medicines, effectiveness, side-effects, anxieties and concerns about medicines generally and, for some, the cost of paying for medicines, as well as relationships with health professionals.
As a health professional, how often do you stop to think about how on earth people cope with using all the medicines you prescribe for them? How many times a day do you consider if you really should add yet another medicine to the already long list of repeat prescriptions? Do you ever think: “I really should consider stopping some of this patient’s medicines”? But how do you do so within the constraints of a short consultation, and is this what patients want? Little research has sought the views of patients or their carers on the desirability of stopping medicines.

The medicines optimisation model advocated by, among others, the Royal Pharmaceutical Society does include the need to understand patient experiences as the first of its four fundamental principles, the remainder being: evidence-based choice of medicines, ensuring safe use of medicines and making medicines optimisation part of routine practice. There is a growing body of evidence that shows that there are risks to patients’ well-being and social functioning from having to manage large quantities of medicines every day. The PRIMM conference brought together speakers and researchers with an interest in this topic.

**Process of deprescribing**

Professor Nina Barnett, a consultant pharmacist for older people in the Medicines Use and Safety Team, NHS Specialist Pharmacy Service at London North West Healthcare NHS Trust, described seven steps in a consultation model. This model aimed to reduce the numbers of medicines prescribed for individual patients, otherwise known as deprescribing. These steps are:

1. Assess the patient
2. Define overall context and goals
3. Identify medicines with potential risk
4. Assess risks and benefits in context of individual patient
5. Agree actions to stop, reduce dose, continue or start
6. Communicate actions with all interested parties
7. Monitor and adjust regularly.

While this may seem to be a tall order for a short consultation, Prof Barnett has shown that it is not. By agreeing to prioritise one or two issues per consultation, all can be achieved within 5 to 15 minutes. A shared agenda is critical to success; understanding what the patient wants to achieve from the medicines review together with your identification of clinical priorities. Communication of actions and follow-up, with the patient, carers and other health professionals, is key to safe, effective practice.

These steps are not dissimilar to those recommended by Scott et al. in their article on the process of deprescribing. She also emphasises the importance of language in consultations. Polypharmacy is not a term that patients are likely to be familiar with, nor is deprescribing. She suggests not talking to an individual about polypharmacy, which may sound like them having “too many medicines”, but instead aiming to reach agreement on “the right number for you”, through a process of ongoing “trial and review”.

It is important to recognise that deprescribing is not just something to be considered in the context of end-of-life care and for reasons of medication safety. Nor is it only in general practice where deprescribing should be happening. While deprescribing can be relevant to patients of any age, it is especially relevant to older patients. It may involve other settings relating to older people, such as old age psychiatry and care homes, where review can be beneficial, or simply the acute hospital setting.

### Beers criteria

A list of medications that are less appropriate for use in older people

### STOPE/START tool

A list of prescribing scenarios that are less appropriate in older people. A user-friendly version is available from NHS Cumbria. The original is available at: http://medicines.necsu.nhs.uk/download/stopp-start-2-cumbria-screen-version/

### MedStopper

A Canadian web-based tool that helps prioritise medicines to stop and gives guidance on how to withdraw medicines. Available at: www.medstopper.com

### PolyPharmacy Guidance

A Scottish web-based tool that summarises the evidence base for specific groups of medicines; the provision of numbers needed to treat (NNT) can help facilitate patient-centred discussions around whether or not to continue medications. Available at: http://www.polypharmacy.scot.nhs.uk

**Table 1.** Widely used algorithms to assist in tapering or stopping undesirable medicines

<table>
<thead>
<tr>
<th>Algorithm</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Beers criteria</strong></td>
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### Evidence-based deprescribing

Once you realise that a patient is struggling to cope with their medicines, and has decided that deprescribing may be appropriate, what then? Algorithms, which involve tapering or cessation of undesirable medicines (see Table 1), can help guide clinical decisions in reducing medicines, although again it could be argued these are clinician- rather than patient-driven guidelines and may focus too heavily on reducing medicine costs.

There is a lack of evidence on the effectiveness and sustainability of deprescribing, as well as insufficient validation. There is a dearth of effective interventions to reduce polypharmacy in general, as shown by a Cochrane review, which concluded that “it is unclear if interventions... such as pharmaceutical care [reviews], resulted in a clinically significant improvement; however, they appear beneficial in terms of reducing inappropriate prescribing and medication-related problems.” The authors suggested that “interventions that focus on difficulties that people experience with daily functioning... may be more effective.”

### Identifying patients who may benefit from deprescribing

What if the patient does not tell you they are having difficulties? Strategies for identifying patients with potential problems arising from polypharmacy are currently based mainly on numbers...
of medicines or the presence of potentially inappropriate medicines. Dr Denis O’Mahoney from University College Cork presented his unifying theory at the PRIMM conference, which indicates that polypharmacy is a core problem in relation to adverse drug events. He said that inappropriate overprescribing in response to complex co-morbidity is the major contributor to these problems. He defined an inappropriate medicine as one that:

- Has the wrong, or no, indication
- Has an unacceptably high risk of an adverse event
- Is unnecessarily expensive
- Is given for too short or too long a time period.

This philosophy led to the development of the widely used Screening Tool of Older People’s Prescriptions (STOPP). Research from his group has shown that the proportion of potentially inappropriate prescribing is 21% in primary care, but much higher in secondary care and care homes. Use of the tool enables the identification of avoidable adverse events and improvement in a range of outcomes. Hence the NICE guideline on medicines optimisation advocates using the STOPP/START tool to identify patients who should be targeted for medication reviews.

Both these approaches (focusing on the number of medicines and the presence of inappropriate medications) to identify patients at risk of problems from polypharmacy adopt the biomedical approach. The patient’s lived experience is just as important. Instruments that measure the burden of polypharmacy from the patient’s perspective could not only help to ensure that this is indeed placed at the centre of any intervention or consultation, but may also provide an alternative means of identifying patients who may benefit from intervention.

One new instrument that may prove useful in future is the Living with Medicines Questionnaire.

### Individualised prescribing

Identifying patients who may have problems with multiple medicines is one thing, but ideally it is better for it not to develop

<table>
<thead>
<tr>
<th>Step</th>
<th>Process</th>
<th>Purpose</th>
<th>Clinician self-check</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Data collection</td>
<td>To seek to understand the relative demands on, and resources available to, an individual, to cope with illness and its management</td>
<td>Did I collect an appropriate range of data?</td>
</tr>
<tr>
<td>2</td>
<td>Interpretive process</td>
<td>To draw on multiple sources of information, including the patient’s understanding of illness and disease, as well as the professional’s and that of the scientific community</td>
<td>Did I use the data to make a shared decision?</td>
</tr>
<tr>
<td>3</td>
<td>Explanation offered</td>
<td>To use the knowledge from step 2 to decide whether or not it is in the patient’s best interests to medicalise their illness experience</td>
<td>Did my decision support or address improving health as a resource for living?</td>
</tr>
<tr>
<td>4</td>
<td>Generalisability</td>
<td>To review the decision made in step 3</td>
<td>Would I have made the same decision for others?</td>
</tr>
<tr>
<td>5</td>
<td>Evaluate validity</td>
<td>To review the impact of the decision in terms of the extent to which it supports restoration or continuity of daily living and reduction in illness</td>
<td>Did my decision making make a difference for this individual?</td>
</tr>
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Table 2. Personalised decision-making in generalist practice

in the first place. Dr Joanne Reeve, an academic GP, posits that a different approach to the consultation may be needed, which helps you to “go off protocol”. At the PRIMM meeting, she described the School for Advancing Generalist Expertise (SAGE) consultation model for generalist practice. This model supports personalised decision making; that is, interpretive practice that goes beyond the application of guidelines to an individual patient. There are five steps in this consultation model (see Table 2).

She argued that using this model allows GPs and other health professionals to make decisions that are ‘off-protocol’ with confidence, tailoring these to individual patients. Providing individually tailored care to patients with polypharmacy was the subject of a recent survey led by Dr Reeve. A total of 444 health professionals responded, with nurses making up the majority of respondents (53%); 22% of respondents were GPs and 20% pharmacists. One-third of the respondents claimed to be providing individualised prescribing, with GPs being least likely to be doing so.

There are a number of barriers to GPs prescribing outside guidelines while providing generalist care, including clinical skills, organisational context and medicolegal concerns. These barriers limit the uptake of deprescribing. However, deprescribing is a fundamental part of prescribing, and the routine review of medicines should include consideration of whether the medicines are still appropriate. An article co-authored by Prof Barnett concluded that: “When deprescribing is undertaken in partnership with patients, supported by the knowledge, skills and experience of both patient and clinicians and the patient’s values and preferences based on clinical skill, judgement and evidence-based medicine, law presents no barriers to deprescribing.”

### Taking frailty into account

Many researchers, as well as individual practitioners, are now grappling with the
problems of doing something about polypharmacy. Some ideas were highlighted at the PRIMM conference. Dr Reeve proposed facilitated daily living through individualised prescribing of medicines, which incorporates organisational change as well as individually tailored prescribing.

As well as STOPP/START, Dr O’Mahoney’s group have also developed a frailty index and carried out a retrospective analysis, which found that adverse reactions and inappropriate prescribing occur more frequently in patients with a frailty index score of 0.16 or above. Dr Shane Cullinan from this group described a more recent prospective study that confirmed this, with adverse drug reactions being more dependent on frailty than on the number of medicines being used. They suggested that combining frailty score with number of medicines may be a good method of identifying patients who may benefit from deprescribing. Their work is continuing internationally in the EU-funded SENATOR project (www.senator-project.eu).

A Bradford-Leeds consortium, involving Dr Duncan Petty, presented their systematic review of published models of deprescribing, which highlighted the fact that none take account of frailty. This group are also proposing to develop and test a novel patient-centred, shared decision-making model, based on determining which medicines pose greater risks to frail patients, and qualitative work with patients and prescribers.

So, is less more? Only time will tell, but plenty of practitioners and researchers are working towards finding the answer.

References
POEMS

Lipid treatment for primary prevention not effective in older adults

Clinical question:
In patients older than 65 years with elevated low-density lipoprotein levels but no cardiovascular disease, is cholesterol lowering effective in decreasing mortality or morbidity?

Bottom line:
If a patient makes it to 65 years old without developing cardiovascular disease, lowering his or her cholesterol level at this point is not effective, and might even be harmful if treatment is started at age 75 years. Given the lack of benefit also shown in other studies, it might be time to stop checking - and treating - high cholesterol in these age groups. (LOE = 1b)

Reference:


Synopsis:
This report is an analysis of a trial that evaluated the primary prevention of cardiovascular disease using cholesterol lowering. It focused on patients who were at least 65 years old and had an elevated fasting low-density lipoprotein cholesterol (LDL-C) level (3.1-4.9mmol/L). The Lipid-Lowering Trial (LLT) component of the Antihypertensive and Lipid-Lowering Treatment to Prevent Heart Attack Trial (ALLHAT-LLT) study enrolled 2867 adults 65 years or older with hypertension but without baseline atherosclerotic cardiovascular disease. The patients were randomised to usual care or pravastatin 40mg daily. Most patients in the usual care group were not treated with a statin.

Over the six years of follow-up, all-cause mortality was not different between the two treatment groups for patients 65 to 74 years of age (hazard ratio for pravastatin vs usual care = 1.08 (95% CI, 0.85-1.37; p=0.55) and was almost statistically higher for pravastatin in patients at least 75 years of age (hazard ratio of pravastatin vs usual care = 1.34 (0.98-1.84; p=0.07). Rates of coronary heart disease events were not different between the groups in either age group.