Editorial

The dilemma of polypharmacy

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The prevalence of chronic diseases, for which one or more medicines may be indicated, increases with age. Polypharmacy is usually defined as the use of five or more drugs, including prescribed, over-the-counter, and complementary medicines. It may be a useful prompt for medication review, as it is associated with problems of medication management and suboptimal prescribing. However, polypharmacy is not a clinically useful independent marker of the quality use of medicines. The type and dose of medications rather than the number of medications determine meaningful clinical outcomes.1

The more drugs a patient takes, the harder it may be to obtain an accurate medication history, which impedes informed medication review and prescribing. The incidence of adverse drug reactions increases with the number of medications used. Polypharmacy is a barrier to adherence because of the associated complex medication regimens, increased risk of adverse drug events and high medication costs. Poor adherence contributes to the increased risk of medication errors seen with polypharmacy.

Polypharmacy is associated with suboptimal prescribing. The more drugs a patient is exposed to, the more likely they are to be prescribed inappropriately.2 ‘Potentially inappropriate medications’ in the elderly include those with sedative or anticholinergic effects and long-acting non-steroidal anti-inflammatory drugs.3 Polypharmacy may occur when additional drugs are prescribed to treat the adverse effects of other drugs. This is known as the ‘prescribing cascade’.4 Other suboptimal prescribing associated with polypharmacy includes prescription of more than one drug in the same class or prescription of a drug that interacts with or is contraindicated in combination with another of the patient’s medicines. Ironically, in a study of older patients the probability of under-prescribing – defined as lack of an indicated drug when no reason could be found for not prescribing it – also increased significantly with the number of drugs prescribed.5

The risk of falls is increased with polypharmacy. This association is partly due to the chronic diseases for which the multiple medications are prescribed.6 With polypharmacy, the increased use of specific classes of drugs, especially centrally acting and cardiovascular medications, is also likely to be a factor in increasing the risk of falls.7

The key issue is whether each drug has been prescribed appropriately, both individually and in the context of the patient’s total medication exposure, risk of drug interactions, comorbidities, physiology and quality of life. Some drugs, particularly those with anticholinergic and sedative effects, impair physical and cognitive function in older people. The more drugs with these effects that patients are exposed to, in number and in dose, the poorer the patients’ overall function. A tool such as the drug burden index1, which measures the patient’s total exposure to anticholinergic and sedative medications using the principles of dose-response, provides a better indication of the risks of suboptimal prescribing than simply counting drugs.

There are several conditions in which the combined use of several drugs may be beneficial, appropriate, and advocated through evidence-based guidelines.8 For example, primary prevention of macrovascular disease in diabetes may require one or more oral hypoglycaemics and/or insulin, one or more antihypertensives, lipid-lowering therapy, and aspirin. It is not clear how to apply treatment guidelines to frail older people with multiple comorbidities, because the evidence that supports them was not obtained from this population. Application of...
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Prescribing exercise for diabetes

Editor, – In the article ‘Prescribing exercise for diabetes’ (Aust Prescr 2007;30:130–3), the author adequately takes into account cardiovascular and neurological concerns when advising, for example, jogging or running. However, relative adult weight gain (weight gain compared to weight on reaching maximum height and general maturity) is seemingly not addressed other than in very general terms. Patients may be at risk of considerable irreversible weight-bearing joint damage if this issue is neglected, since even prolonged walks in obese individuals could result in aggravated ankle, knee and hip degeneration due to the load-bearing involved.

References


Conflict of interest: Dr Hilmer holds a patent for the drug burden index with Drs Abernethy and Mager.