



Pharmaceutical Society of Singapore Pharmacy Week 2015



Polypharmacy in Singapore: The Role of Deprescribing

Introduction

In Singapore, life expectancy has continually increased due to greater accessibility to healthcare, good sanitation and vaccination programs. Ageing patients “accrue” comorbidities, resulting in accumulation of layers of drug therapy. This puts them at increased risk of drug-drug interactions, adverse events due to age-related alterations in pharmacokinetic and pharmacodynamic responses to drugs, and poor compliance because they are not able to manage the complex medication regimens. [1] Ease of access to quality medications, national targets and performance measures, niche-group evidence-based guidelines, the singular focus on treatment of each disease state without reviewing chronic medications, or failure to recognise adverse drug reactions contribute to the development of polypharmacy.

Polypharmacy has been defined in many different ways and the appropriate definition may differ according to patient population and study setting. [2] Fulton and Allen [3] defined polypharmacy as: 'the use of medications that are not clinically indicated'. In practice, polypharmacy is often conveniently defined as using more than a certain number of drugs, irrespective of the appropriateness of drug use. [4] Cardiovascular conditions, diabetes, renal disease and chronic obstructive pulmonary disease are commonly associated with polypharmacy. [5] Polypharmacy is a world-wide phenomenon. In developed countries, approximately 30% of patients aged 65 years or older are prescribed with 5 or more drugs. [6] Data from a Singapore restructured hospital showed that at least half of all discharged patients in 2013 went home with 5 or more chronic medications; 27.7% were discharged with 8 or more chronic medications. It was observed that the length of hospitalization and age of the patients increased with the number of medications. [7]

Polypharmacy is a double edged sword. Polypharmacy may be essential or beneficial for some patients if instituted carefully. However, inappropriate polypharmacy ensues when the intended benefit of the medication is not achieved, leading to poor drug adherence and increase in unintended drug related problems (DRP).

Broadly, polypharmacy can be classified into 3 categories:

1. Inappropriate polypharmacy – where drug that is contraindicated or no longer indicated should be deprescribed.
2. Appropriate polypharmacy with identified DRP such as drug-drug interactions, unintended adverse drug reactions, confusion over complex medication regimens or noncompliance – where optimisation and fine-tuning of medication regimens need to be carried out. Here, the coordination of care, simplification of medication regimen and implementing measures to ensure compliance is critical;
3. Appropriate polypharmacy – where patient education, regular reviews and monitoring of current medication regimens are important to ensure patient compliance and optimal treatment outcomes.

The aims of this position statement are to raise awareness of inappropriate polypharmacy and to encourage healthcare professionals to take an active stance against inappropriate polypharmacy.

Is Polypharmacy A Problem In Singapore?

The prevalence of polypharmacy and inappropriate medication use is high in Singapore nursing homes. Among 454 geriatric residents from 3 different nursing homes, more than half were on greater than 5 medications, and inappropriate medication use was seen in 70% of the residents. Common DRP detected included use of medication without proper indication (n = 302), significant potential for adverse drug reactions (n = 281) and drug interactions (n = 141). [8]

A cross-sectional retrospective study of over 400 patients, with an average age of 67 years of age and 10 medications per patient, accounted for over 600 episodes of admissions within a three-month period at a local restructured hospital. DRP accounted for 15% of the total admissions: 7.7% presented with adverse drug events, a further 1.7% was attributed to under- or overdosing of medications, and non-compliance accounted for 5.6% of the episodes. The number of medications per day, liver disease, schizophrenia and non-compliance were significantly associated with readmissions within 15 days. About one-third of the patients were readmitted at least once. [9] A further analysis demonstrated that the readmission length of stay (average 7.6 days) was significantly associated with the number of medications and total daily doses (average 18). [10] Therefore, available data to date highlight that inappropriate polypharmacy is associated with significant care issues.

Reducing Inappropriate Polypharmacy Via Deprescribing

Healthcare professionals may adopt a deprescribing approach as one of the means to combat the undesirable consequences of inappropriate polypharmacy. Deprescribing is a systematic process of identifying and reducing doses of or discontinuing drugs where existing or potential harms outweigh existing or potential benefits within the context of an individual patient's care goals, current level of functioning, life expectancy, values and preferences. The objectives of deprescribing are to alleviate symptoms of drug toxicity, improve quality of life (from drug-induced disability and confusion due to complex medication regimen), and to prevent the occurrence of potential future DRP. [11]

There have been examples of successful deprescribing, both worldwide and locally. A group of Canadian pharmacists published numerous case reports, illustrating how they worked closely with both the patients and the prescribers to deprescribe unnecessary medications to reduce the risk of falls in the elderly. Benzodiazepines and anticholinergic agents were slowly tapered off and discontinued. [12] Complicated antihypertensive, hypoglycaemic, and pain relief regimens were simplified to improve compliance and minimise drug-related adverse events. [13] In the local setting, a Singapore mental health institution managed to safely achieve a reduction of antipsychotic polypharmacy in chronic schizophrenia patients with proper clinical titration, aided by guidelines and protocols. There were no documented relapses within six months of implementation. [14] In a Singapore restructured hospital, "Project Cut-a-pillar" was conceived to set up a structured workflow and system to pick up and correct inappropriate polypharmacy. A prospective interventional project initiated in April 2015 demonstrated that over 92% of patients had at least one medication successfully deprescribed. A larger study reviewing long term outcomes needs to be carried out in the local setting to ensure deprescribing is safe and effective for patients. [15]

Despite these successes, many barriers to successful deprescribing exist. These include time limitations during the daily work routine of healthcare professionals, poorly communicated or fragmented care among multiple specialists leading to potential differences in opinions between healthcare professionals on which medication should be deprescribed. Other physicians' concerns include the clinical complexity of patients, the fear of worsening conditions and/or concern with withdrawal effects from drug cessation. [16-17] Patients themselves may also be reluctant to stop medications if they are perceived as beneficial. To overcome these barriers, close collaboration between healthcare professionals including prescribers, pharmacists and nurses is paramount to deprescribe efficiently. In addition,

deprescribing should also adopt a patient-centric approach where patient engagement to establish agreed care goals and patient education on the medications are essential.

The Pharmaceutical Society of Singapore and Pharmacy Week 2015 committee, with the support of the Society for Geriatric Medicine, Singapore, Singapore Nurses Association, and Association of Diabetes Educators (Singapore), jointly introduce the idea of deprescribing as an approach to reduce inappropriate polypharmacy. It is crucial that multi-disciplinary teams concertedly employ deprescribing initiatives to optimise care and reduce harm to patients. These initiatives may involve the organization of care around a particular condition, or targeting a class of medication which may be overprescribed and associated with problems.

Conclusion and Recommendations

Polypharmacy with inappropriate drug use and its associated harm is a growing issue. Recognition of inappropriate polypharmacy is the first step towards prevention of harm. Healthcare professionals are strongly encouraged to engage in judicious medication use and prescribing by employing the deprescribing approach via a 5-step systematic process. Prescribers may take the lead in deprescribing, with the facilitated support from nurses and pharmacists. As a multi-disciplinary team, health care professionals must engage actively in patient interviews in order to solicit patients' perspectives and determine medication compliance, in order to rationalise and optimise medication use in patients.

Along with this statement, we have formulated a slide kit for your use to spread the message – they will cover polypharmacy and why deprescribing is required. The proton pump inhibitors are the first class of drugs which we propose to be deprescribed at a healthcare system level.

Supported by:



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