Appropriate deprescribing in older people: a challenging necessity. Commentary to accompany themed collection on deprescribing. Nathalie van der Velde, Jatinder S Minhas. Accepted manuscript published in Age and Ageing https://doi.org/10.1093/ageing/afab142

Abstract

Older people are often taking several medications for a number of different medical conditions. Although physicians prescribe medications to treat diseases and symptoms, there may be also harmful side effects, especially so in older people taking several medications. Unfortunately, regular review of the benefits or risks of prescribed medications is as of yet not part of standard care. Also, data on how and in whom to stop medications in older people is scarce. The reason this is an important area of work is that medication related issues in older people are a common cause of harm, including both expected and unexpected effects of medications. Research to date tells us that to ensure successful implementation of structured and appropriate deprescribing, careful planning within hospital systems is needed. This includes involving different members of the team to ensure the patients truly benefit. The themed collection published on the *Age and Ageing* journal website offers key articles providing tools to assist decision-making, implementation strategies and multi-disciplinary interventions – all with the aim of improving patient outcome and sustainability of deprescribing approaches.

Key points

- **Deprescribing is complex and available tools assist in decision-making.**
- **Implementation strategies, particularly around clinical decision support systems are required.**
- **Multidisciplinary team involvement in deprescribing improves patient outcomes and sustainability of interventions.**

Population ageing is accompanied by a steep increase of the prevalence of multimorbidity. In Western societies, by the age of 65 approximately 50% of people has one or more chronic diseases; by the age of 75 this goes up to three or more. A consequence of this is polypharmacy. These prescriptions are aimed at preventing or treating symptoms and conditions, but more often than we assume they result in adverse drug reactions, especially in older, frailer persons[1].

Many drug prescriptions are necessary, but for some the indication is weak, the risk of adverse effects may be high, the condition they are treating has resolved, or the prescription treats an adverse effect of another drug. Sometimes, polypharmacy simply adds to the 'pill burden' of taking so many tablets. Counterintuitively, there even appears to be more potentially inappropriate prescribing (PIP) in those least likely to benefit, as shown in a Danish registry study. This study identified an increase in prescriptions after nursing home admission, with a high proportion being drug classes with questionable benefit in individuals with limited life expectancy[2]. Fortunately, on the other hand appropriate 'deprescribing' is gaining popularity in medical care. Whilst the specific aim of a deprescribing task can vary, the overall process can undoubtedly be beneficial for patient outcomes. Deprescribing encompasses the process of a medication review to identify medications that are no longer indicated, appropriate or aligned with the focus of that individuals' care, e.g. his or her goals and wishes[1]. Unfortunately, deprescribing has no widely accepted definition that encompasses the aims of all interested inter-disciplinary parties[1]. However, deprescribing should be considered a cornerstone of high-quality holistic patient care, with active recognition of the complexity that pharmacological interventions present in the older person. This themed collection will identify important contributions to the literature published in *Age and Ageing* and highlight their position in our current understanding of this topic area.

Adverse drug reactions (ADRs) often present atypically in older people including common acute presentations such as a fall or delirium episode. This increases the risk of non-recognition by

healthcare professionals, the patient themselves and carers, thus leaving the older patient at risk of further adverse drug events. Beyond everyday primary and secondary care interactions, specific clinical situations have been considered prompts for clinicians to deprescribe, including hospital admissions and end-of-life care. In order to address potential reluctance around deprescribing, practical tools have been designed to optimise this process. Commonly applied examples include: the screening tool of older people's prescriptions and screening tool to alert to right treatment (STOPP/START) criteria[3] and Fit fOR The Aged (FORTA) labelling method for chronic disease medications[4]. Aiming to personalise care, also situation-specific tools for specific patient groups have been developed, such as The Screening Tool of Older Persons Prescriptions in Frail adults with limited life expectancy (STOPPFrail)[5], Screening Tool of Older Persons Prescriptions in older adults with high fall risk (STOPPFall)[6]. These tools, based on up-to-date literature and consensus validation provide an objective mechanism to reduce medication related morbidity in vulnerable clinical states.

Whilst up-to-date approaches to deprescribing exist, these are currently insufficiently implemented in clinical practice with considerable variation between practices and heterogeneity in clinical behaviour. To overcome this problem, the logistics, environment and delivery of deprescribing has been the subject of several prospective studies. The importance of multidisciplinary collaboration, particularly with pharmacist colleagues has been considered within several studies to date. Specifically, a lack of pharmacist presence led to greater inappropriate prescribing (MAGIC-PHARM)[7], and biannual structured medication reviews improved the appropriateness of psychotropic medication prescribing for institutionalised dementia patients[8]. In addition, the Fit fOR The Aged (FORTA) randomised trial demonstrated hospitalised older patients benefit from improvement of medication quality through this labelling method for medications to treat chronic diseases[4]. There appears to be convincing evidence for the value of regular structured medication reviews, particularly also in those with a formal diagnosis of cognitive impairment. Randomised data

examining the effectiveness of the Appropriate Psychotropic drug use in Dementia (APID) index demonstrated significantly improved (lower) scores for psychotropic drug prescriptions[8].

A recent theme for deprescribing interventions has been the development of clinical computer software to generate recommendations to inform decision-making, often incorporated in the electronic patient records. The first systematic review to examine the impact of Clinical Decision Support Systems (CDSS) showed statistically significant reductions in potential inappropriate prescribing (PIP) in hospitalised older adults[9]. Nevertheless, not all (CDSS) trials were successful. Given the complexity of the intervention, process evaluation to determine enabling and disabling factors is crucial. In the international SENATOR RCT[10] a CDSS based on the STOPP/START criteria was introduced without success. In the process evaluation, limited engagement with the CDSS was identified as a limitation, underlining the importance of well-thought out and meticulous implementation of such tools in both trial and clinical settings. Several barriers exist to implementation, including lack of knowledge, uncertainty of the effect and time pressures. In the first study to evaluate computer generated STOPP/START recommendations, three quarters of recommendations were clinically relevant, though half of these were of low importance[11]. Importantly, higher relevance recommendations were more likely to be implemented. With regard to implementing deprescribing in general, the hospital deprescribing implementation framework (hDIF) identified behavioural determinants and their associated intervention components to facilitate deprescribing in older inpatients[12]. Consensus discussions have identified six enabling factors: organisation action plan to prioritise deprescribing, training activities to address negative beliefs, restructuring working patterns to facilitate contribution to deprescribing, sharing experiences of successful engagement and sustaining engagement through measuring and sharing deprescribing activity[12]. A clearly identified limitation to several studies to date is the sustainability of deprescribing activity beyond the trial/study period. Sustainability can be closely linked to understanding the habits and motivations of physicians engaged in deprescribing. Exploratory analysis

has demonstrated perceived life expectancy and cognitive impairment as driving factors for deprescribing.

Looked at from the patient perspective, PIP can be considered a huge issue for multi-morbid older people and this is consistent for all settings [13,14,15]. A large meta-analysis of 20,153 hospitalised patients aged ≥65 years demonstrated that over 12% of patients experienced one or more adverse drug reactions[13]. Remarkably, 20 adverse drug reaction presentations represented 90% of all adverse drug reactions in older people[13]. Nevertheless, within the literature, very little has been reported on patients' lived experiences of medications and their associated issues[14]. Exploration through interviews examining the discharge period of older people from hospital has identified issues around communication, insufficient support avenues and therefore a higher risk of harm[14]. These patient related challenges are coupled with other heterogeneous clinical behaviours associated with deprescribing. For example, the STOPPFall study, a European Delphi study, highlighted that even between experts in the field there was no full agreement on all potentially relevant medication classes to be addressed when deprescribing in older people who fall[6]. Of the 17 medication classes that were not retained to the final listing, for six medication groups there was no consensus whether or not these were clinically relevant fall-risk-increasing drugs (FRIDs)[6]. In geriatric syndromes such as falls, disentangling the culprit medication within a multifactorial condition can be challenging and decision trees as developed in the deprescribing tool STOPPFall can be helpful in decision making in clinical practice[6].

There appears to be acceptance that deprescribing tools are not stand-alone strategies, but require multi-disciplinary multi-factorial approaches to maximise their value. Future work should interlink challenging themes around patient communication, shared decision-making, intervention sustainability and maximising the multidisciplinary team input. Given the complexity in the decision making process in deprescribing, tools that support this are warranted. Lastly, given the complexity

around demonstrating medication associated harms, there is a specific need for high quality research assessing potential negative effects of deprescribing, an area for which very little reassurance as to current practices exists.

Through this themed collection, we highlight literature that explores strategies, challenges in delivery, implementation, developments and establishes directions for future work in the domain of deprescribing.

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