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Deprescribing: Barriers, Benefits, and Harms

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ABSTRACT

Polypharmacy, which is the practice of prescribing five or more medicines to the same patient is associated with many problems like adverse drug reactions and poor adherence to therapy and can be harmful. Recently, the term deprescribing is used to describe the systematic process of identifying and discontinuing medicines in situations in which potential or existing harms outweigh potential or existing benefits for the seek of individual patient care goals and preferences. Many studies assessed the attitude of patients or perceptions of health care practitioners towards deprescribing, others evaluated barriers or factors affecting deprescribing. Since the practice of deprescribing is growing, this study aimed to review the harms, benefits, and barriers of deprescribing. Some studies reported that patients may be interested in withdrawing one or more of their medicines if advised by their treating doctors and at the same time costs and experiencing medication adverse effects may result in a willingness to decrease the number of medications taken. Harms that may occur due to deprescribing can be minimized or even prevented by using a structured and patient-specific deprescribing process with proper planning and careful monitoring during and after medication withdrawal.

Key words: *Deprescribing, Polypharmacy, Adverse drug effects.*

INTRODUCTION

Medicine prescription is the most common treatment manner [1, 2]. The practice of prescribing five or more medicines to the same patient is called polypharmacy and can be harmful to the patient and may lead to many adverse effects [3-5]. Polypharmacy is a known problem in elderly patients with multi-morbidities and can lead to inappropriate drug prescribing [6], it is associated with many disorders and may lead to hospitalization and increased mortality [7, 8]. On the other hand; prescribing new medications, monitoring, and adjusting the doses of existing medications, and ceasing medications are considered components of good pharmaceutical care [9].

The term deprescribing has been recently suggested to reduce inappropriate polypharmacy. It is a systematic process to identify and discontinue medicines in situations in which potential or existing harms outweigh potential or existing benefits for the seek of an individual patient care goals and preferences, deprescribing can effectively and safely decrease the use of potentially inappropriate medications [6, 10].

Deprescribing is a proposed intervention to reduce adverse drug effects, reverse the potential iatrogenic harms of inappropriate polypharmacy, and reduce inappropriate or ineffective medicines by regular tapering, withdrawing, and discontinuing medicines [11, 12]. Also, it has additional benefits to the patient by engaging him in medical therapy and improving adherence to the therapy [3].

Since the term of deprescribing is new, many studies tried to put a precise definition for deprescribing. For example; Amy et al. 2018 reported that the term deprescribing is used with different degrees of precision and identified it as "a patient-centered process of medication withdrawal intended to achieve improved health consequences through discontinuation of one or more medications that are either no longer required or potentially harmful" [9].

There are some barriers to deprescribing; it includes patient-related factors like fear of consequences of discontinuing the medication that is currently beneficial for the condition; other factors are related to the prescriber and system [6, 10].

Many studies assessed the attitude of patients or perceptions of health care practitioners towards deprescribing; others evaluated barriers or factors affecting deprescribing. Since the practice of deprescribing is growing; therefore, this review aimed to highlight the benefits, harms, and barriers of deprescribing.

Benefits, harms, and barriers of deprescribing

Palagyi et al. 2016 explored the perceptions of medication and deprescription in long-term care facilities (LTCFs) in Australia; they conducted interviews with general practitioners, pharmacists, nursing staff, and residents and their relatives. They reported that in order to promote ongoing evaluation of resident's clinical need for deprescribing, the deficiency in confidence and knowledge of both general practitioners and nursing staff providing aged care services should be addressed [4].

A study conducted in Saudi Arabia investigated and identified the barriers that might prevent family medicine physicians from engaging in deprescribing among older patients; the study identified several barriers and highlighted the need for more education to both family medicine physicians and patients to improve the deprescribing practice [13].

Tegegn et al. 2017 assessed the willingness of older patients (351 participants) to deprescribe inappropriate medications in Gondar, Ethiopia. They found that most of the participants (92.1 %) were satisfied by the medications they were taking; nevertheless, 81.6 % of the patients showed their willingness to decrease one or more of their medications if advised by their doctors [3].

In 2018, Reeve and her colleagues assessed older Medicare Beneficiaries' attitudes towards deprescribing in the United States; in this study, a total of 1752 older adults showed their willingness to discontinue one or more of their medications if their doctors said it is possible to stop these medicines. At the same time, 1241 older patients wanted to decrease the number of medications they were using [5].

Another study surveyed one hundred Danish older patients taking ten prescribed medicines to evaluate their attitudes towards deprescribing. This study found that multi-morbid outpatients with excessive polypharmacy trust their physicians and feel that pharmacotherapy is important and has very low or no adverse effects. However; almost 50 % of the participants showed their interest to be invited to specialized outpatient clinics focusing on polypharmacy to reduce the number of their medications. The study stressed the need for healthcare providers to offer medication reviews and provide systematic follow-up afterward [14].

Turner, et al. 2016 reported that the perceives of general practitioners, nurse, pharmacist, and residents are most important when deciding whether or not to deprescribe medications and the important factors recognized include evidence for deprescribing, general practitioner tendency to deprescribing clinical appropriateness of therapy and wellbeing of the patient [15].

In a cross-sectional study in Australia included 232 patients aged 65 years with 70.3 % of them taking nine regular medications; the study aimed to explore their acceptance to have their medications deprescribed and concluded that the deprescribing is likely to be acceptable by the participants with a high willingness to stop medicines if advised by their physicians [16].

Beer et al. 2011 studied patients aged 80 ± 11 years and were taking 9 ± 2 medications to study the feasibility of reducing the dose or complete withdrawal of a list of medicines for common chronic disorders. In this study, 15 participants started medication withdrawal and all stopped or decreased the dose of their target medications and the study found that deprescribing was reasonable to the participants [12].

A study conducted in New Zealand evaluated general practitioner recognized challenges for deprescribing in residential care and the possible enablers that encourage general practitioners to initiate deprescribing. The study concluded that the process of deprescribing is faced with many challenges for general practitioners; while the deprescribing enablers included the improvement of multiple prescriber's communication, increasing general practitioners' awareness and knowledge and involvement of pharmacist in the multidisciplinary team [17].

Turner et al. 2017 conducted a population-based study in Canada aimed to assess older adults' knowledge regarding medication-induced harm and their awareness about the term "deprescribing". The results showed that 65.2 % of the participants were aware of the concept of medication-induced harms; while only 6.9 % identified the term deprescribing and the study reported that in order to promote the concept of deprescribing, health care providers should initiate deprescribing conversations with the patients [18]. Similarly; Reeve and her colleagues in 2016 conducted a research in Australia aimed to investigate the attitudes, beliefs, and views of carers and older adults about deprescribing and suggested that the discussion between healthcare providers and the older adults or carers about withdrawing medications should specify and highlight the reasons for deprescribing [19]. Accordingly; Zhang et al. (2018) recommended that healthcare providers should proactively provide patient-educational materials as part of a general strategy to promote deprescribing [20]. Gillespie et al. (2019) explored the experiences, beliefs, and attitudes about polypharmacy and deprescribing or discontinuing medications in community-living older adults administering five medications. It was observed that older adults with polypharmacy are generally comfortable with their medications and experience a few concerns. However, they may show an interest in reducing one or more of their medicines so as to decrease the number of drugs they are taking; additionally, suffering from side effects, believing that medicines may be unnecessary, and costs may lead to a desire to reduce the number of medications prescribed [21].

A systemic review and meta-analysis study investigated deprescribing safety and effectiveness in health outcomes and reducing mortality in older adults ; the study reported that some nonrandomized data concluded that deprescribing decreases mortality, while others documented that deprescribing did not alter mortality [22].

Whitman and his colleagues in 2018 assessed the feasibility of pharmacist-led polypharmacy in a geriatric oncology clinic in the United State and showed that deprescribing intervention resulted in approximately two-thirds of participants reporting a reduction in symptoms and concluded that pharmacist-guide deprescribing interventions are feasible and may lead to improved patient outcomes and cost savings [23].

Taline et al 2017 explored the harms and benefits of deprescribing long-dated proton pump inhibitor therapy in adults in comparison with chronic daily use (≥ 28 days). They screened 2357 articles. 1 trial examined abrupt discontinuation of proton pump inhibitors and 5 trials evaluated on-demand deprescribing. They reported that the data were insufficient to conclude regarding long-term harms and benefits of proton pump inhibitors discontinuation [24].

Pruskowski and his colleagues (2019) conducted a systematic review of randomized controlled trials and non-randomized prospective studies of older adults. They found that four studies assessed the effect of deprescribing on hospital admission and emergency department visits and found no significant differences. The research concluded that deprescribing may not significantly improve the quality of life nor satisfaction with care, yet it may reduce hospital and emergency department admission [25].

A study investigated the major safety concerns and harms of deprescribing in older patients that included: adverse effects of drug withdrawal, the return of medical conditions, damage to the doctor-patient relationship, and a reversal of drug-drug interactions. The study revealed that by using a patient-centered, structured deprescribing process, most of the harms can be reduced or may be prevented with good planning, gradual withdrawal, and close monitoring during and after medication withdrawal [26].

CONCLUSION

Deprescribing is a proposed intervention to reduce adverse drug reactions, reverse the potential harms of inappropriate polypharmacy, and also reduce inappropriate or ineffective medicines by regular tapering, withdrawing, and discontinuing medicines.

Patients may be interested in withdrawing one or more of their medicines if advised by their treating doctors and at the same time costs and experiencing medication side effects may result in a willingness to decrease the number of medications taken.

Hospital and emergency department admissions can be reduced by pharmacist-guided deprescribing interventions. Harms that may occur due to deprescribing can be minimized or even prevented by utilizing a structured patient-specific, deprescribing process with proper planning and careful monitoring during and after medication withdrawal.

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