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Perspectives

How-to guide for medication reviews in older adults with cancer: A Young International Society of Geriatric Oncology and Nursing & Allied Health Interest Group initiative

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ABSTRACT

For patients with polypharmacy or potentially inappropriate medication (PIM) use identified on geriatric assessment, a medication review is recommended. The medication review aims to ensure that the potential benefits of medication outweigh any potential harms and ensures the patient is receiving medication to effectively treat their medical conditions while minimizing risk of toxicity. The medication review encompasses: (1) collecting information to identify medication indications, efficacy and side effects, (2) evaluating adherence, (3) identifying PIMs, (4) identifying drug interactions, and (5) deprescribing. This paper provides the "how-to" guide to conduct a high-quality medication review by the cancer care multidisciplinary team.

1. Introduction

Older adults with cancer often use multiple concurrent medications, a practice called polypharmacy. Polypharmacy is most commonly defined as the use of five or more medications, although definitions vary [1]. The prevalence of polypharmacy in older adults with cancer ranges from 11% to 96% depending on how it is defined [2]. Polypharmacy in older adults with cancer increases the risk of potentially inappropriate medication (PIM) use, defined as using a medication in which risks outweigh potential benefits, occurring from continuing a medication that is no longer necessary or where safer alternatives exist [3]. Polypharmacy and PIM use are associated with adverse drug events, frailty, falls, cognitive impairment, chemotherapy toxicity, postoperative complications, unplanned hospitalizations, and mortality [4,5]. Both polypharmacy and PIM also increase the risk of drug interactions and influence medication adherence [6]. Managing polypharmacy among adults with cancer is burdensome due to the financial cost of medications, concerns about the patient's ability to self-manage medications, and the effort needed to monitor for medication side effects and contraindications [7]. Deprescribing targets cessation of inappropriate or unnecessary medication after considering treatment goals, benefits, and risks [8].

A geriatric assessment (GA) is useful for identifying polypharmacy and PIM use. This multidimensional, interdisciplinary diagnostic process determines an older adults' medical, psychosocial, and functional capabilities [9]. For older adults with cancer, the International Society of Geriatric Oncology (SIOG) has published consensus guidelines for performing a GA that informs a coordinated and integrated plan for cancer treatment and surveillance by assessing functional status, comorbidity, cognition, mental health status, social status and support, nutrition, medication use, and presence of geriatric syndromes [10]. To perform GA, clinicians use various validated tools and instruments [10]. Tools to identify polypharmacy and PIM include using lists of potentially inappropriate drugs/drug classes (explicit criteria) or based on a context-dependent and individualized approach that relies on the evaluator's expertise and knowledge (implicit criteria) [11].

When a GA identifies polypharmacy or PIM use, a medication review (MR) can be used to better understand medication usage in older adults with cancer. Current American Society of Clinical Oncology (ASCO) guidelines recommend MR as part of the practical assessment and management of older adults with cancer [12]. An MR evaluates each medication indication, dose, duration, frequency, efficacy, cost,

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adherence, potential for drug-interactions, and potential toxicities [13,14]. The aim of the MR is to ensure that the potential benefits of medication outweigh any potential harms and ensures the patient is receiving medication to effectively treat their medical conditions, while minimizing risk of toxicity. This paper provides practical guidance on how to conduct a high-quality MR in older adults with cancer along with information on how members of the multidisciplinary team can participate in this important component of the GA.

2. Identify Which Patients May Benefit from a Medication Review

Addressing polypharmacy requires a systematically targeted, holistic, person-centred approach using best practice guidance [14]. While all older adults with cancer may benefit from MR, it may be neither practical nor feasible in busy clinical environments with limited resources. Using the common definition of five or more medications has been recommended for identifying patients who would benefit from MR [15]. However, the cutoff value for number of medications best predicting adverse effects in older adults with cancer is unclear. A recent study suggested that ≥8 medications was the optimal cutoff value associated with physical function impairment [16]. Triggers to repeat MR include changes in organ function e.g., renal, liver or cardiac impairment, unplanned hospitalization or other care transition, and addition of new medications [17]. As a minimum, it is recommended that a MR is repeated annually [18]. Further guidance for performing the MR in older adults with cancer comes from the National Comprehensive Cancer Network (NCCN) [17] and SIOG [10], which have outlined the essential components, such as assessing medication indication and dose appropriateness, assessing polypharmacy and PIM, evaluating adherence and drug interactions, and discontinuing inappropriate or unnecessary medication.

3. Identify Appropriate Multidisciplinary Team (MDT) Members to Conduct a Medication Review

Multidisciplinary teams (MDT) bring together the expertise and skills of physicians, nurses, pharmacists, and allied healthcare professionals, e.g., dieticians and physiotherapists to assess, plan, and manage the care of patients with complex needs. Providing a quality MR involves knowledge of pharmacotherapy, pharmacology, and effective communication [13]. Various members of the multidisciplinary team may conduct MR, including physicians, pharmacists, nurses, and advanced care practitioners [19]. Oncologists and advanced care practitioners have multiple opportunities because they see patients often during cancer treatment, but they often lack time and access to tools to undertake a comprehensive MR during a cancer treatment planning consultation [20]. Additionally, a lack of financial incentives, care fragmentation, and reluctance to manage medications prescribed by others may limit their implementation of MR [21,22]. Where available, a pharmacist may be the optimal team member to conduct or oversee the MR, given their expertise in managing medications. A prospective observational study comparing the impact of geriatrician- versus pharmacist-led MR demonstrated that a systematic assessment by pharmacists improved identification of medication-related problems [23]. Embedding pharmacists into clinics may also alleviate physician workload [23,24]. Additionally, pharmacist-led MRs have demonstrated effectiveness in identifying polypharmacy and PIMs [25,26] and implementing deprescribing in ambulatory clinics for older adults with cancer [24]. Greater integration of pharmacists as part of the MDT caring for older adults with cancer is recommended by ASCO [12].

4. Conducting a Medication Review

An MR encompasses the assessment of various aspects related to medications as described below and outlined in Fig. 1.

i. *Obtain a full medication history*: Medication reconciliation involves obtaining a complete and accurate list of patients' medication and is aimed at detecting and solving medication discrepancies. Accurate medication reconciliation is an important first step for a medication review, aimed at identifying and addressing medication-related problems. Once a list of medications is collated, the dose for all medications should be reviewed in relation to the patient's age and organ function (e.g., renal, liver, cardiac function). This step includes monitoring for efficacy and medication-related side effects, such as monitoring blood pressure for someone on blood pressure lowering medication to ensure treatment goals are achieved and side effects (e.g., hypotension, bradycardia, electrolyte imbalance) are managed.

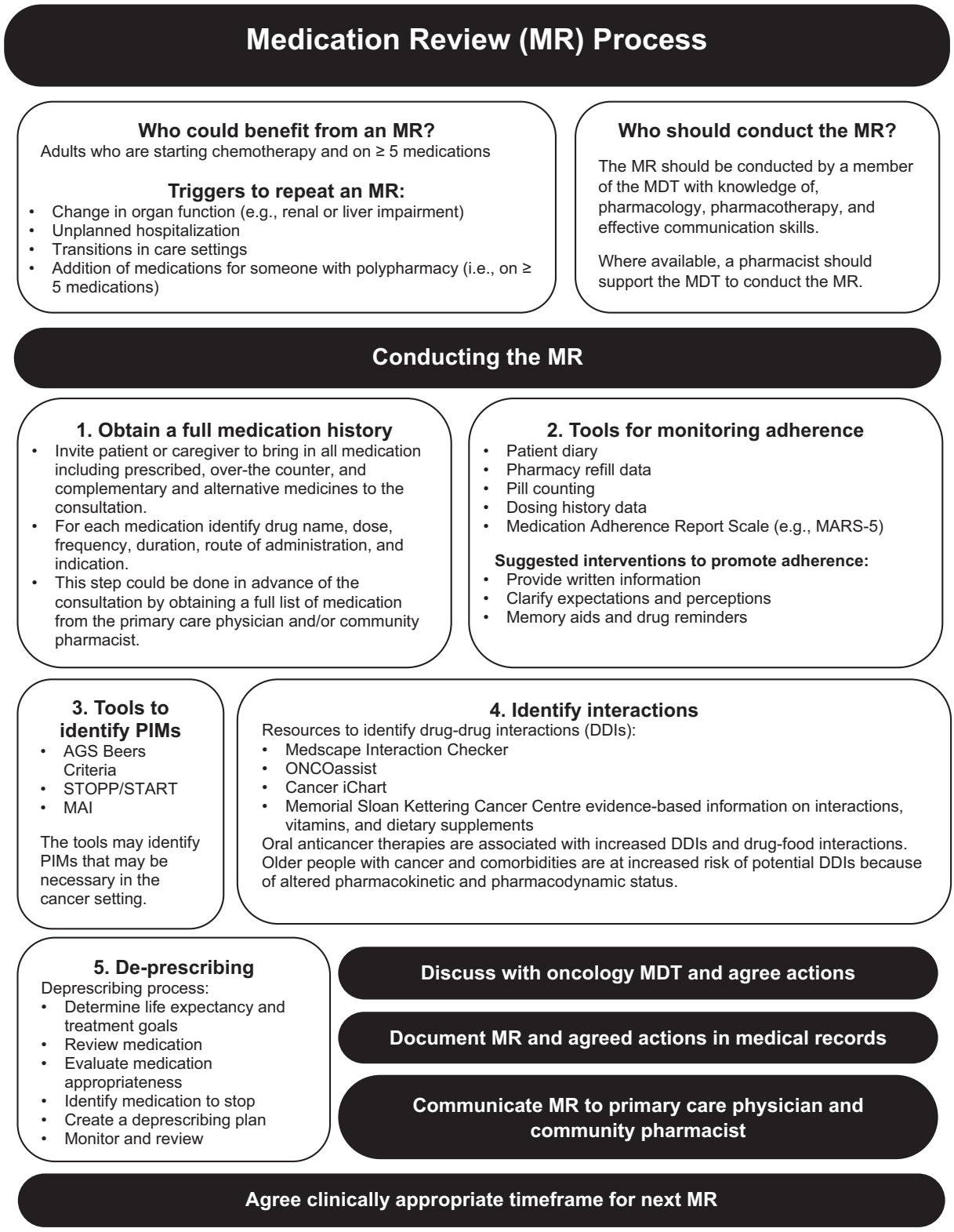
ii. *Monitor adherence*: Evaluate adherence using various resources such as patient diaries, pharmacy refill data, dosing history data, and validated tools that assess self-reported medication adherence (e.g., the 5-item Medication Adherence Report Scale [MARS-5]) [27]. Some of the methods to evaluate adherence may be onerous in clinical practice and may not be accurate. A simple question like 'Have you missed any doses in the last seven days?' may be feasible to elicit patient medication taking behaviour. However, there is currently no gold standard for measuring medication adherence in older adults with cancer [28]. When choosing an approach to evaluate adherence, clinicians may need to balance practicality and reliability of available tools or resources to measure adherence. Strategies to minimize non-adherence include advising patients and caregivers about the benefits of the medication and the risks of not taking it, and explaining how to take medication and common side effects and what to do if they occur [17]. Strategies to minimize non-adherence should also consider medication-related financial burden on patients and the patient's cognitive ability to take responsibility for their own medications.

iii. *Identify PIMs*: PIMs can be identified using validated tools, such as the American Geriatrics Society Beers criteria [29], the Screening Tool for Older People's Prescriptions (STOPP)/Screening Tool to Alert Doctors to the Right Treatment (START) [30], and the Medication Appropriateness Index (MAI) [31]. Some PIMs identified may be contextually appropriate for patients on cancer treatment. NCCN guidelines [17] provide alternatives for commonly used supportive care medications that are of concern in older adults.

iv. *Identify interactions*: Free resources are available to identify drug-drug, drug-food, and drug-disease interactions, such as Medscape interaction checker (https://reference.medscape.com/drug-interactionchecker), Cancer iChart (https://cancer-druginteractions.org/), ONCOassist (https://oncoassist.com), and the Memorial Sloan Kettering Cancer Centre evidence-based information on interactions, vitamins and dietary supplements (https://www.mskcc.org/cancer-care/diagnosis-treatment/symptom-management/integrative-medicine/herbs). Clinical decision support software systems, such as, Lexi-Interact® and Micromedex® may also be used to identify drug interactions [32].

v. *Deprescribing*: Discontinue or withdraw medications as much as possible to reduce patient harm. Turner and colleagues have proposed a six-step approach to deprescribing in older people with cancer, summarised in Fig. 1 [8].

On completion of the MR, it is vital to discuss proposed actions with the MDT and clearly document agreed actions, such as modifications to prescriptions and proposals for deprescribing. A summary of the actions should be sent to the primary care physician and community pharmacist, as appropriate. MR consultation by a pharmacist has been reported to be around 20 min, excluding the additional time needed for documenting the outcome of the consultation and discussing and agreeing



AGS American Geriatrics Society; MAI, Medication Appropriateness Index; MDT, multidisciplinary team; PIM potentially inappropriate medications; START, Screening Tool to Alert Doctors to the Right Treatment; STOPP Screening Tool for Older People's Prescriptions.

Fig. 1. Medication review process in older adults with cancer.

to actions with the MDT [23,24,33].

5. Conclusion

An MR involves an assessment of each medication to evaluate its indication, dose, clinical effectiveness, and safety (e.g., drug-drug interactions or duplication, level of adherence, adverse reactions, and the need for stopping or continuing the medication). This manuscript provides guidance, alongside the commonly-used tools, on how to conduct an MR in the geriatric oncology clinic. An MR should be prioritised in older adults with cancer on five or more medications. Where available, pharmacists should be integrated into the cancer care multidisciplinary team, given their knowledge and skills to perform quality MR. As efforts to conduct MR increases in routine care of older adults with cancer, it will become important to identify metrics to evaluate the impact of MR on patient outcomes, e.g., medication-related hospital admissions, medication overuse, clinically significant drug-drug interactions and health-related quality of life.

Author Contributions

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Declaration of Competing Interest

Nil

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