Geriatric assessment-driven polypharmacy discussions between oncologists, older patients, and their caregivers

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ABSTRACT

Objectives: Polypharmacy (PP) and potentially inappropriate medications (PIM) are common in older adults with cancer, increasing the risk of adverse outcomes. Approaches to identifying and addressing PP/PIM are needed.
Materials and Methods: Patients ≥70 years with advanced cancer were enrolled in this cluster-randomized study. All underwent geriatric assessment (GA), and oncologists randomized to the intervention arm received GA-driven recommendations; no information was provided to oncologists at usual care sites. For patients with PP (≥5 medications or ≥1 high-risk medication), clinic visits with treating oncologists were audiorecorded and transcribed, and discussions regarding PP/PIM identified. Quality of provider response was coded as dismissed, mentioned, acknowledged, or addressed.
Results: Forty patient transcripts were analyzed (20 per arm). More discussions occurred in the intervention group (n = 81) versus the usual care group (n = 51). More concerns per patient were brought up in the intervention group (4.1 vs. 2.6, p = 0.07). Physician-initiated discussions were higher in the intervention group (73% vs. 49%, p = 0.006). More PP concerns were "addressed" in the intervention group (59% vs. 45%, p = 0.1). Oncology supportive care medication concerns were more often addressed in the usual care group (58% vs. 18%, p = 0.008), but medication management concerns were addressed more commonly in the intervention group (38% vs. 79%, p = 0.003).
Conclusion: In this secondary analysis, a GA-driven intervention increased PP discussions, particularly about total number of medications and medication management. PP/PIM concerns were more commonly addressed in the intervention group, except for the subset of conversations about supportive care medications.

1. Introduction

The prevalence of multimorbidity, or multiple chronic health conditions, increases with age [1]. Multimorbidity is associated with polypharmacy (PP), commonly defined as the consumption of 5 or more daily medications [2]. Older adults are at high risk for PP due to multimorbidity and the involvement of multiple specialists; "prescribing cascades" are also common, whereby new medications are prescribed to treat the adverse effects of other medications [3]. PP increases the likelihood of potentially inappropriate medications (PIMs), or medications with risks that may outweigh benefits in older adults. PP and PIMs increase the risk of adverse drug events and interactions, and are associated with additional adverse outcomes including falls, hospitalizations, financial burden to patients and the healthcare system, and mortality [4].

Cancer prevalence is also associated with aging, and by 2030 it is estimated that 70% of incident cancers will be diagnosed in adults ≥65 years [5]. Antineoplastic treatment regimens, encompassing both antineoplastic agents as well as supportive care medications, can significantly increase the number of prescribed medications: in one study, older patients with cancer were taking an average of 9 medications [6], compared to an average of 4 medications for community-dwelling older adults without cancer [7]. Approaches to identifying and addressing PP in older patients with cancer have not been well-characterized. Several qualitative studies have investigated physician attitudes regarding management of PP in the elderly; however, these studies were not specific to cancer patients, and interventions were not described [8,9]. A few studies have investigated "deprescribing" interventions for patients with cancer, but these have largely focused on patients at the end of life [10].

Guidelines recommend the administration of a geriatric assessment (GA) to all older patients with cancer [11,12]. The GA is a multidisciplinary assessment of a patient's function across multiple domains, including PP, using sets of validated instruments. It detects deficits not revealed by the standard oncologic evaluation [13], and has been

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shown to predict survival [14] and chemotherapy toxicity [15,16] in older adults with cancer. Multiple validated tools exist for the assessment of PP/PIM as part of the GA; [17] the Beers Criteria, last updated in 2015 [18] has been the most widely utilized. Studies are underway to investigate how the GA may be used to trigger interventions for older cancer patients at risk for adverse outcomes, including those related to PP/PIM.

Given the risk and prevalence of PP concerns in older adults with cancer, and significant gaps in knowledge regarding how to address these concerns, data collected from an ongoing national clinical trial was used to explore this issue. This secondary analysis investigates and compares the frequency, nature, and efficacy (appropriateness) of conversations about PP between patients, caregivers, and oncologists.

2. Materials and Methods

2.1. Patient Selection

A descriptive comparison study was conducted on a subset of patients participating in the multisite cluster randomized national Improving Communication in Older Cancer Patients and Their Caregivers (COACH) study (University of Rochester Cancer Center NCI Community Oncology Research Program [URCC NCORP] Study #1307, clinical trial.gov #NCT02107443). All eligible participants were 70 years of age or older, had a diagnosis of advanced solid tumor malignancy or lymphoma, impairment in at least one of eight geriatric domains other than PP (such as cognition, function, or psychological status) and were receiving antineoplastic therapy including hormonal treatment, chemotherapy, monoclonal antibody therapy, or other targeted therapy. Patients included in this analysis had impairments in PP identified in the GA, as defined by either: 1. taking ≥5 medications daily; or 2. taking at least 1 high risk medication as defined by the 2015 Beers Criteria [18]. Antineoplastic therapies and topical medications (including prescription eye drops) were excluded from the medication count, but oral/injectable vitamins and supplements were included. Forty patients were selected for inclusion (20 from the intervention group and 20 from the control group). The 40 patients were identified by screening all study participants who had PP impairments in order of consecutive ID numbers. To obtain the required sample size 31 patients were screened for the control group and 27 patients were screened for the intervention group.

2.2. Procedures/Intervention

In the multicenter, cluster randomized COACH study, prospectively enrolled older cancer patients received a GA prior to starting antineoplastic therapy. Community oncology practice sites within the URCC NCORP were randomized to either control or intervention. Human subjects approval was obtained for all settings, recruitment occurred at the local practice site, and all patients, caregivers and oncologists signed informed consent. All patients completed a baseline GA using validated tools [19–28] known to predict morbidity and mortality in older community dwelling older adults [29]. For those randomized to the intervention arm, oncologists were provided the GA results, including a summary of impairments and recommendations for management of these impairments (developed by geriatric oncology experts and guidelines [30]) including PP recommendations. Control group sites received no additional information. Following completion of their GA, patients returned for a clinical encounter with their treatment provider, which was audio-recorded. In this subset, 28 treatment providers were included: 19 providers had 1 patient in the cohort, 6 providers had 2 patients, and 3 providers had 3 patients.

Table 1
Subcodes and definitions used in analysis.

Type of polypharmacy concern	
Subcode	Definition: any mention of…
Supportive care medications	Use of med for the adverse effects of treatment
Number of medications	Total number of meds
High risk medications	Use of high-risk meds as defined by Beers Criteria
Drug/drug interactions	Potential for adverse interactions between meds
Medication management	Use of medications for comorbid conditions
Age-related side effects	Age-related side effects from non-cancer meds

Quality of response to polypharmacy concern	
Subcode	Definition: the healthcare provider…
Dismissed	Actively shut down, ignored, moved away from, or minimized the concern expressed
Mentioned	Asked/began conversation about non-cancer medications or supplements
Acknowledged	Explored the issue but did not implement any care processes
Addressed	Implemented appropriate care processes to address the concern

2.3. Measures

Demographic data and GA data were collected at baseline for all patients. Measures related to PP conversations at oncology provider follow-up visits were obtained from the audio-transcript of the clinical encounter. The transcript was transcribed verbatim, checked for accuracy and de-identified. Narrative content in the transcripts were extracted based on a priori criteria and a coding manual. The coding schema was developed by experts in geriatric oncology and narrative coding, and was designed to capture and evaluate the appropriateness of communication for age-related concerns discussed during the clinical encounter. The coding schema includes definitions of each code and the

Table 2
Patient demographics at baseline.

	Control	Intervention
Age (mean)	77.5	76.8
Gender		
Male	60%	50%
Female	40%	50%
Race/ethnicity		
White/non-Hispanic	90%	95%
African-American	10%	5%
Education level		
≤High school	60%	65%
>High school	40%	35%
Marital status		
Divorced	10%	25%
Married	70%	60%
Single, never married	0%	5%
Widowed	20%	10%
Income level		
≤50k	55%	60%
>50k	20%	20%
Decline/unknown	25%	20%
Patient's living situation		
+Child/relative	10%	5%
+Spouse/partner	65%	60%
+Spouse/partner and child	10%	0%
Lives alone	15%	0%
Nursing home	0%	10%
Self-identified health status		
Excellent	10%	5%
Very good	25%	15%
Good	30%	45%
Fair	25%	20%
Poor	5%	15%
Unknown	5%	0%