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Beyond the black box of geriatric assessment: Understanding enhancements to care by the geriatric oncology clinic

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ABSTRACT

Objective: Comprehensive geriatric assessment (CGA) of older adults with cancer aids treatment decision-making and prognostication. Much less is known about the supportive care elements or enhancements to care afforded by the CGA. We characterized the enhancements to care provided by a geriatric oncology clinic and determined how these vary by indication for referral.

Materials and Methods: All patients age 65 or older referred to a single academic geriatric oncology clinic between July 2015 (clinic opening) and June 2017 were included. Treatment enhancements were prospectively recorded in 5 categories: educational support, comorbidity management, symptom management, oncologic treatment delivery, and peri-operative management recommendations. Indications for referral were categorized into 3 groups: pre-treatment (n = 97, 44%), on active treatment (n = 89, 41%), and survivorship phase (n = 33, 15%). Data were analyzed using descriptive statistics and multivariable logistic regression.

Results: 219 patients were seen during the study period (mean age 79.7 years, 69% male). Overall, educational support (96%) and comorbidity management (95%) were the most common enhancements, whereas peri-operative management (10%) was the least common and provided only to pre-treatment patients. Enhancements to cancer treatment delivery were offered more often to patients pre-treatment than on active treatment (61% versus 41%, $p < 0.001$). Other enhancements to care did not vary by indication for referral.

Conclusion: Educational support and comorbidity management are nearly universally offered. Most enhancements to care do not vary by indication for referral. Understanding the enhancements to care provided by geriatric oncology clinics can help with resource planning and program design.

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1. Introduction

Multiple organizations including the International Society of Geriatric Oncology, the National Comprehensive Cancer Network, and the European Organisation for the Research and Treatment of Cancer have called for the routine use of geriatric assessment (GA) in older adults prior to the initiation of cancer treatment. GA can improve prognostication, help refine risk prediction for treatment toxicity (particularly chemotherapy), and can influence treatment decision-making [1]. Indeed, a systematic review by Hamaker et al. of 10 studies demonstrated a median of 39% of treatment decisions were modified after a GA [2].

GA is usually provided in geriatric oncology (GO) clinics, which are becoming more widespread [3]. Although improving treatment decision-making and reducing both over- and under-treatment are clearly important goals of GO clinics, there are other valuable services that such clinics provide. These can include comorbidity management,

clarification of treatment goals, symptom management, medication reconciliation and optimization, and other elements of care [4,5]. However, few reports detail these enhancements to care that are provided by GO clinics. This information is important because it helps non-geriatric oncologists more fully understand what GO clinics offer patients. In addition, it aids in determining effective resource requirements for establishing new or expanding clinics.

Our primary objective was to describe the enhancements to care provided in a GO clinic. In addition, to better understand which groups of patients received specific enhancements to care, we examined how enhancements to care varied based on typical indications for referral.

2. Methods

2.1. Study Design

This was a prospective observational study of consecutive patients referred from the onset of an academic GO clinic in a tertiary cancer centre. Consecutive patients age 65 or older seen in the Older Adults with Cancer Clinic (OACC) at the Princess Margaret Cancer Centre

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(PM), Toronto, Canada, between July 2015 (clinic opening) and June 2017 were included. Patients could be referred by any physician affiliated with PM. In our first year, we focused on patients age 75 or older with genitourinary cancer and the clinic operated one half-day per week. In our second year, we expanded to two half-day clinics per week and accepted referrals of patients age 65 or older from any cancer site. All patients were seen by a GO nurse and one of two geriatric medicine specialists (SMHA or AB) with or without a senior resident or fellow. The study was approved by the University Health Network Research Ethics Board. The requirement for informed consent was waived as this was a secondary analysis of registry data.

The GA assessed the following domains using standardized tools [6] where possible: comorbidity, polypharmacy, nutrition, functional status, social situation, bowel and bladder function, pain and fatigue, vision and hearing, mood, and cognition. The GA typically required 90 min to complete. To better understand vulnerability, all patients were also asked to complete the Vulnerable Elders Survey-13 (VES-13). The referring physician was provided with a standardized summary of the findings of the GA and recommendations. Recommendations and interventions were usually followed-up by the GO clinic or occasionally delegated to the oncology team or general practitioner.

2.2. Classification of Enhancements to Care

As we could not identify a relevant classification system for enhancements to care in the literature, we developed our own (Table 1) based on discussions among the investigators. To ensure face and content validity, the classification system was presented to an external stakeholder group consisting of a geriatrician, a palliative care specialist, a nurse, and a clinic administrator. It then underwent refinement and clarification. Ultimately five categories of care enhancement were used for this study: cancer treatment delivery, comorbidity management, educational support, symptom management, and peri-operative management.

2.3. Data Handling

A customized database was designed using Microsoft Access. All data were recorded prospectively, although approximately one-quarter of patients had been seen prior to finalization of the Access database. Prospectively collected data for these patients were transferred over from Word and Excel files. GO clinic recommendations and enhancements to care were recorded primarily by clinic nurses (RJ, AL) and supplemented by attending physicians (SMHA, AB).

A random sample of 10% of patient charts was reviewed for data completeness and accuracy. Data were routinely audited by a database specialist (SW) to identify missing data or inconsistencies.

Table 1
Classification system of enhancements to care.

Category	Examples
Cancer treatment delivery	Social worker to help with transportation Blister packing cancer medications Chemotherapy toxicity risk prediction Suggestion of dose reduction
Comorbidity management	Polypharmacy/medication optimization Diabetes/heart failure management Cognitive impairment diagnosis & management Orthostatic hypotension management Physiotherapy for deconditioning/falls
Educational support	To patient or family/caregiver around diagnosis, management, or prognosis
Symptom management	Dietitian for weight loss Management of pain/constipation/diarrhea/low mood
Peri-operative management	Delirium prevention Prehabilitation/early rehabilitation Geriatric inpatient consult Medical consults to see pre-op

2.4. Perceived Value of Geriatric Oncology Clinic

We electronically surveyed 35 physicians who had referred one or more patients in a 3-month period with 5-item Likert scale questions, to ask whether they found that the GO clinic helped them make treatment decisions for frail or complex older patients and whether the GO clinic helped support their patients during active treatment. A satisfaction survey was also provided to all new and follow-up patients seen in a one-month period in the GO clinic.

2.5. Statistical Analysis

For enhancements to care, descriptive statistics were calculated using means for continuous variables and frequencies or proportions for categorical variables. To examine whether the proportion of patients receiving a specific enhancement to care varied by referral type, we used logistic regression, adjusting for age, gender, disease site, and treatment intent. Stepwise modelling was not performed. A p-value of <0.05 was considered significant for all analyses. No adjustment was made for multiple significance testing. No formal sample size calculation was performed.

Descriptive analyses were performed for survey results.

3. Results

3.1. Baseline Characteristics

Over the study period, a total of 219 older adults with cancer were seen in the OACC. The mean age was 79.7 years (range 65–96) and 69% were male. Treatment intent was curative in 94 (43%) patients. The most common disease site was genitourinary, representing 46% of patients seen (n = 100). The vast majority of patients were considered vulnerable (VES-13 score ≥ 3 , 83%). Other baseline characteristics are shown in Table 2.

3.2. Enhancements to Care

The most common enhancements to care across all patients were educational support to patients/caregivers (n = 210, 96%) and comorbidity management (n = 207, 95%), whereas the least common was perioperative management (n = 22, 10%). Overall enhancements to care and by patient referral type are shown in Table 3.

Table 2
Baseline characteristics (n = 219).

Characteristic	n (%)
Age, mean years (range)	79.7 (65–96)
Male gender	151 (69%)
Vulnerable Elders Survey-13, mean (SD)	5.8 (3.0)
Vulnerable Elders Survey-13 score ≥ 3	179 (83%)
Treatment intent	
Curative	94 (43%)
Palliative	111 (51%)
Other/unknown	14 (6%)
Disease site	
Genitourinary	100 (46%)
Gastrointestinal	47 (21%)
Head & neck	12 (5%)
Thoracic	12 (5%)
Other	48 (22%)
Treatment stage/referral type	
Pre-treatment	97 (44%)
Active treatment	89 (41%)
Post-treatment survivorship	33 (15%)

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