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Geriatric assessment with management in cancer care: Current evidence and potential mechanisms for future research



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ABSTRACT

Older adults with cancer represent a complex patient population. Geriatric assessment (GA) is recommended to evaluate the medical and supportive care needs of this group. “GA with management” is a term encompassing the resultant medical decisions and interventions implemented in response to vulnerabilities identified on GA. In older, non-cancer patients, GA with management has been shown to improve a variety of outcomes, such as reducing functional decline and health care utilization. However, the role of GA with management in the older adult with cancer is less well established. Rigorous clinical trials of GA with management are necessary to develop an evidence base and support its use in the routine oncology care of older adults. At the recent U-13 conference, “Design and Implementation of Intervention Studies to Improve or Maintain Quality of Survivorship in Older and/or Frail Adults with Cancer,” a session was dedicated to developing research priorities in GA with management. Here we summarize identified knowledge gaps in GA with management studies for older patients with cancer and propose areas for future research.

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1. Introduction

Older patients with cancer are a heterogeneous group, and chronologic age does not necessarily reflect physiologic age in this population. GA should be utilized in determining a patient’s fitness for cancer treatment and developing a personalized treatment plan.¹ GA is a set of tools to assess a variety of domains that commonly impact older adults, including physical function, comorbidity and polypharmacy, nutrition, cognitive function, social support, and psychological status. GA can provide a comprehensive assessment of a patient’s overall health status and identify potential areas of vulnerability. In non-cancer patients, geriatricians recognize these areas of vulnerabilities and develop goal-directed interventions in response to GA impairments to potentially improve outcomes. “GA with management” describes the resultant medical decisions and interventions implemented in response to vulnerabilities identified on GA. In older patients with cancer, GA can be incorporated into routine oncology evaluation. Items contained in the GA predict chemotherapy toxicity, and GA has been shown to influence decision making for cancer treatments. However, GA has not yet been routinely used to develop goal-directed interventions and guide management in older patients with cancer. Although there are data to support the benefit of GA with management interventions in the non-cancer population, the optimal approach for developing and implementing these interventions in older patients with cancer is not established. Because oncologists are not always familiar with the geriatrics literature and may not be willing to extrapolate information from the non-cancer population, knowledge about the feasibility and benefit of GA with management in oncology will be important to move the field forward. Data supporting the impact of GA with management on cancer-specific as well as non-cancer-specific outcomes will be necessary to support utilization of geriatric assessment and management as a standard of care for older patients with cancer. Here we summarize research priorities for GA with management discussed at the recent U-13 conference “Design and Implementation of Intervention Studies to Improve or Maintain Quality of Survivorship in Older and/or Frail Adults with Cancer.” We will review current knowledge on the use of geriatric assessment in cancer care, discuss the evidence supporting GA with management in the non-cancer population, and summarize knowledge gaps regarding GA with management in older patients with cancer and propose mechanisms to fill these knowledge gaps.

1.1. What is Known

1.1.1. Geriatric Assessment in Oncology Care

It is feasible to incorporate GA into routine oncology practice. Hurria and colleagues developed a cancer-specific GA, the majority of which is completed solely by the patient within 27 min.² It is also feasible to incorporate GA into a private oncology practice model and community oncology clinics.^{3,4} Elements of the GA have also been shown to be predictive of chemotherapy toxicity.^{5,6} The Cancer and Aging Research Group (CARG) developed a predictive model for chemotherapy toxicity that includes several GA measures as well as cancer and treatment-specific factors. The model was developed in 500 patients with cancer aged ≥65 years and found that geriatric-specific risk factors, such as history of falls and needing assistance with taking medications, were predictive of grade 3 to 5 chemotherapy toxicity.⁵ Extermann and colleagues also developed a chemotherapy toxicity risk prediction model, the Chemotherapy Risk Assessment Scale for High-Age Patients (CRASH) score. The CRASH model also included several GA risk factors, such as needing assistance with Instrumental Activities of Daily Living (IADL) (e.g., meal preparation or housework) and impaired cognition (Mini Mental Status Exam [MMSE] score < 30), which were predictive of chemotherapy toxicity.⁶ GA is influential in clinical decision making. Hamaker and colleagues conducted a systematic review of the effect of GA on treatment decision making in older patients with cancer. They identified six studies that addressed a change in oncologic treatment and found that the initial treatment plan was modified in 39% of patients based on GA results.⁷

1.1.2. Geriatric Assessment with Management Intervention

GA with management improves a variety of outcomes in older, non-cancer patients. In a study by Frese and colleagues of 1620 community-dwelling adults aged 70 years and over, individuals randomized to GA with management interventions had a 22.3% decreased risk of death. The risk of nursing home placement was also lower in the intervention group.¹² The DEED II study demonstrated that GA with implementation of geriatric management interventions for community-dwelling older adults with a recent Emergency Room (ER) visit produced lower rates of hospitalization at 30 days and 18 months following the initial ER visit. The management intervention group maintained better physical and mental function at 6-month follow-up than the control group.¹³ A Cochrane meta-analysis evaluated the benefit of

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