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Editorial

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Geriatric assessment and management: is decreasing treatment toxicity good enough?

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The majority of new cancer cases occur in older adults. Geriatric assessment and management (or comprehensive geriatric assessment) refers to the use of various validated tools to assess an older adult's health status and guides subsequent therapeutic and supportive care interventions. It is important to note that there are 2 steps to geriatric assessment and management: the evaluation of an older adult's aging-related health conditions (ie, physical performance, cognition) and management through adjusting cancer plan in response to knowledge about aging-related conditions and/or implementing aging-sensitive interventions to address aging-related conditions (eg, physical therapy referral for falls and balance issues), which is recommended by several professional organizations including the American Society of Clinical Oncology, National Comprehensive Cancer Network, and International Society of Geriatric Oncology (1-3). Earlier studies demonstrated that aging-related vulnerabilities uncovered on geriatric assessment are associated with higher morbidity and mortality (4,5), and geriatric assessment measures can predict treatment toxicity (6,7). However, earlier guidelines were not able to establish a defined role for geriatric assessment and management because of a limited number of large, well-designed randomized controlled trials (RCTs). Since 2020, several clinical trials have been conducted to assess the effects of geriatric assessment and management, and a number of systematic reviews have been performed (8-11). Only one was a meta-analysis by Chuang et al. (12) focusing on treatment toxicity, and none included cost-effectiveness data.

In this issue, Anwar et al. (13) extended the literature by performing a systematic review and meta-analysis on the effectiveness of comprehensive geriatric assessment among older adults receiving curative or palliative treatments. It included 17 RCTs that studied the following outcomes: mortality, hospitalization, readmission, treatment toxicity, change in treatment, quality of life, functional status, and cost (13). Of note, trials were included if geriatric assessment was done and recommendations were provided with or without subsequent implementation. Models of care varied, for instance, centralizations where comprehensive geriatric assessment was performed by a geriatrician, a geriatric oncologist, a trained nurse, or a multidisciplinary geriatric team vs decentralization where comprehensive geriatric assessment was performed by research personnel using validated tools and criteria, results of which were then provided to the treating oncology team. Seven studies had variable or as-needed follow-up visits. One study also incorporated a palliative care intervention with comprehensive geriatric assessment. Trials included older adults undergoing various treatments including chemotherapy, targeted therapy, immunotherapy, radiation, and surgery. Overall, pooled results revealed statistically significant lower treatment toxicity (assessed using clinician-related Common Terminology Criteria for Adverse Events [CTCAE]) in the comprehensive geriatric assessment arm compared with the control or usual care arm. Although there was differential effects of comprehensive geriatric assessment on hospitalization, readmission, change in treatment, and quality of life within specific trials, meta-analysis did not reveal differences between the comprehensive geriatric assessment and control arms. Meta-analysis of results on functional status, postoperative complications, and satisfaction were not feasible because of various definitions. Of these 3 outcomes, satisfaction was better in the comprehensive geriatric assessment compared with the control arm in one study (14). There were no studies on cost-effectiveness of comprehensive geriatric assessment. Results by Anwar et al. (13) are consistent with the meta-analysis by Chung et al. (12) that showed lower treatment toxicity in the comprehensive geriatric assessment arm.

It is important to point out that Anwar et al. (13) included a predefined set of outcomes. RCTs have demonstrated that comprehensive geriatric assessment improved other outcomes important to patients such as decreased number of falls over 3 months as well as increased medication discontinuation (14), completion of advanced directives (15), and completion of goals of care discussion (16). In addition to CTCAE, one study also demonstrated that comprehensive geriatric assessment decreased toxicity assessed on the patient-reported outcome version of the CTCAE, which evaluates patient perspective of treatment tolerability (17).

The key question here is, is decreasing treatment toxicity good enough? We would argue that the answer is yes. Treatment toxicity is included as an endpoint in all therapeutic trials, and a therapeutic drug that treats the disease but leads to severe or fatal toxicities is not an effective option. Therefore, decreasing treatment toxicity is an important outcome, especially in the older adult population. This also brings up the concept of tolerability (ie, the degree to which overt adverse events can be tolerated by the patient) (18). We know older adults are concerned

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about side effects of cancer treatment, and side effects are associated with worse functional status, cognition, and quality of life. Many older adults prioritize these outcomes over survival (19). Survival may not be a meaningful endpoint by itself in a trial evaluating comprehensive geriatric assessment, because patient-centered outcomes are prioritized by patients. In older adults with competing risk factors, outcomes such as mortality, hospitalization, readmission, and change in treatment may not accurately reflect treatment tolerability. Therefore, trials need to consider incorporating tolerability outcomes that are patient-centered and clinically meaningful.

Anwar et al. (13) aimed to pool data on cost-effectiveness of comprehensive geriatric assessment, however, there were no studies that conducted these analyses. In settings of limited resources, cost-effectiveness analyses assist in directing resources in areas of highest yield. It is an important area of consideration in the implementation and dissemination of an intervention.

So where do we go from here? We highlight several areas for future research to promote uptake of comprehensive geriatric assessment: 1) conduct cost-effectiveness of comprehensive geriatric assessment as part of an RCT; 2) incorporate novel and combined endpoints in RCTs of comprehensive geriatric assessment such as treatment tolerability; 3) promote uptake of comprehensive geriatric assessment through methods such as dissemination and implementation science or customer discovery approach in the business world (20); and 4) study various models of care for comprehensive geriatric assessment in specific populations (including different delivery methods as well as variable follow-up times) and how they differentially affect outcomes. Beyond research, the American Society of Clinical Oncology has recently updated its guideline to include a more streamlined version of the geriatric assessment (ie, practical geriatric assessment with management recommendations) (21,22). Through generation of high-quality evidence from research that ultimately leads to development and dissemination of guidelines in comprehensive geriatric assessment, in collaboration with stakeholders, we are one step closer to providing tailored and patient-centered care to our growing older adults with cancer.

Data availability

No new data were generated or analyzed for this editorial.

Author contributions

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Conflicts of interest

KPL has served as a consultant for Pfizer and Seagen and has received honoraria from Pfizer. SGM has no disclosures.

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