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Understanding cognition in older patients with cancer



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ABSTRACT

Cancer and neurocognitive disorders, such as dementia and delirium, are common and serious diseases in the elderly that are accompanied by high degree of morbidity and mortality. Furthermore, evidence supports the under-diagnosis of both dementia and delirium in older adults. Complex questions exist regarding the interaction of dementia and delirium with cancer, beginning with guidelines on how best measure disease severity, the optimal screening test for either disorder, the appropriate level of intervention in the setting of abnormal findings, and strategies aimed at preventing the development or progression of either process. Ethical concerns emerge in the research setting, pertaining to the detection of cognitive dysfunction in participants, validity of consent, disclosure of abnormal results if screening is pursued, and recommended level of intervention by investigators. Furthermore, understanding the ways in which comorbid cognitive dysfunction and cancer impact both cancer and non-cancer-related outcomes is essential in guiding treatment decisions. In the following article, we will discuss what is presently known of the interactions of pre-existing cognitive impairment and delirium with cancer. We will also discuss identified deficits in our knowledge base, and propose ways in which innovative research may address these gaps.

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Contents

1. Introduction	259
2. GAP 1: The optimal way of identifying and measuring pre-existing cognitive impairment in older adults with cancer is not known	259
3. GAP 2: The impact of underlying cognitive impairment on cancer care is unclear	261
4. GAP 3: There are no standard procedures to manage abnormal cognitive screening test results that are found during research studies	261
5. Gap 4: Patients with cancer are not routinely screened for delirium or delirium risk	263
6. Gap 5: Too few studies focus on the prevention and treatment of delirium in older adults with cancer.	263
7. Conclusion	266
Disclosures and Conflict of Interest Statements.	266
Author Contributions	266
Acknowledgments.	266
References	266

1. Introduction

There is a rising incidence of both cancer and neurocognitive disorders with aging. The prevalence of dementia is estimated to be around 6% in persons older than 65 years and 30% of persons older than 90 years.¹ The actual prevalence of dementia may be significantly different, as studies have shown that dementia is underdiagnosed in many patients. Despite the fact that the benefit of routine screening for cognitive impairment in older adults is unclear,² older patients with cancer represent a vulnerable subset, where assessment of decisional capacity is essential. Although patients with dementia may be able to relay preferences in regard to daily activities and care, they may lack the ability to make more complex decisions such as those involving cancer treatment. The implications of even mild cognitive impairment are significant, given that these patients may be at high risk for developing dementia.³ In the setting of cancer treatment decisions hold significant consequences, patients must be able to demonstrate a high degree of understanding and ability to process information in order to proceed with active treatment.

Delirium is also a common, often under-recognized⁴ neuropsychiatric problem associated with substantial morbidity, mortality, and a high potential impact on decision-making ability. The vast majority of studies on the prevalence and impact of delirium have focused on hospitalized general medicine or postoperative patients, as opposed to older adults with cancer. The lack of awareness of delirium incidence and prevalence is especially problematic in the outpatient setting where much of cancer care is delivered.⁵

Both dementia and delirium can contribute significantly to morbidity and mortality in the elderly and are important factors for patients in a number of treatment settings. The coexistence of cancer and dementia or delirium has dramatic implications on treatment decisions and outcomes. The objective of this article is to identify and address gaps pertaining to the diagnosis, screening, and treatment of cognitive impairment and delirium in the older adult cancer patient population. The case study in Table 1 illustrates how these conditions may present, and the issues that arise. This manuscript will address gaps in knowledge and how dedicated

research in this area can help close these gaps. In addition, issues related to protection of patients with cognitive impairment in research are discussed.

2. GAP 1: The optimal way of identifying and measuring pre-existing cognitive impairment in older adults with cancer is not known

Dementia is often misdiagnosed. One study found that the diagnosis of dementia was missed in 21% of patients on a general medical ward, and 20% of patients without dementia were misdiagnosed with the condition.⁶ The presence of several diagnostic classification schemes may lead to different diagnostic conclusions. A study of 1879 people aged 65 years and older enrolled in the Canadian Study of Health and Aging revealed that the prevalence of dementia can differ by a factor of 10 depending on which diagnostic criteria are used, which has important implications for treatment and research.⁷ Although several definitions for dementia exist, the definition set by the Diagnostic and Statistical Manual (DSM) provides a reasonable framework readily applicable to clinical practice.⁸ According to the DSM-5, a diagnosis of dementia requires significant cognitive impairment in at least one of 6 domains apparent from history and clinical assessment (learning and memory, language, executive function, complex attention, perceptual-motor function, and social cognition). The identified deficit(s) must represent a decline from a previous level of function, and interfere with independence in everyday social and occupational function. The major dementia syndromes include Alzheimer's disease, dementia with Lewy bodies, frontotemporal dementia, vascular dementia, and Parkinson disease with dementia. Less common disorders include progressive supranuclear palsy and dementia related to Huntington's disease. Alzheimer's dementia is the most common subtype of dementia in the general elderly population. It represents 60–80% of dementia cases, with a prevalence of 5–7% in most counties.⁹ Vascular dementia represents the second most common form of dementia, comprising approximately 10–20% of cases in North American and Europe, with an estimated prevalence of 1.2–4.2% in

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