

Cancer rates, medical comorbidities, and treatment modalities in the oldest patients

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Abstract

Cancer disproportionately afflicts older patients, with 56% of incident diagnoses and 71% of deaths occurring in this population. Yet little is known about the “oldest of the old”, oncology patients underrepresented in clinical trials. We examined elderly veterans diagnosed with lung, colorectal, prostate or head–neck cancer in 2005 ($n = 194,797$), analyses comparing treatment receipt by age group, 70–84 versus 85–115. Treatment was more common among younger elders, including surgery (1.3% versus 0.6%), chemotherapy (2.1% versus 0.8%) and radiation (1.7% versus 0.7%). Differences were sharper for certain cancers, e.g., chemotherapy for lung (9.0% versus 2.9%), or colorectal surgery (5.8% versus 3.4%). Cancer prevalence is high among elders yet treatment rates appear extremely low, despite evidence of well-tolerated treatment. Toxicity concerns and comorbidities may inhibit pursuit of definitive treatment. As we reconcile definitions of ‘elderly’ with appropriate treatment options, compassionate care requires identifying geriatric oncology guidelines that improve survival and quality of life. Published by Elsevier Ireland Ltd.

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1. Introduction

The proportion of Americans over the age of 65 years is increasing rapidly and is expected to reach nearly 20% by the year 2030 [1,2]. As the next geriatric cohort soon demanding significant treatment and healthcare resources,

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the “baby boomer” generation represents approximately 78 million people in 2005 who are now beginning to turn 60 years old [3]. It is estimated that there were 1,372,910 incident cancer diagnoses in 2005, resulting in over 600,000 deaths [4]. Cancer disproportionately afflicts older patients, as 60% of all cancers and 80% of all cancer-related deaths in the United States involve this older cohort of patients, translating to an 11-fold higher incidence of cancer in persons over the age of 65 relative to their younger counterparts [5]. Not surprisingly, age is the single most important risk factor for developing cancer. At 50 years of age, a person’s risk is perhaps only about 1 in 1000, but by age 80, the incidence rate is nearly 1% per year [6].

Despite this population’s exponentially increasing numbers, little is known about optimal treatment choices for the “oldest of the old”, elderly patients over the age of 85. Toxicity concerns may lead to undertreatment of cancer within this population, as older oncology patients are less likely to be offered potentially effective cancer therapies. This scenario is largely due to concerns regarding their ability to tolerate such treatment [7,8]. Within all older individuals, concerns surrounding coexisting medical or psychiatric conditions also affect the care they receive. Oncology patients over 70 years of age average three diagnosed comorbid conditions in addition to their cancer [6], and the presence of such comorbidities influences both cancer detection and subsequent treatment recommendations. Furthermore, adverse polypharmacy events are a significant problem in older oncology patients with multiple comorbidities, especially for drug interactions with cardiovascular medications [9]. Unfortunately, the majority of older adults with cancer frequently do not have their overall treatment plan managed with an interdisciplinary approach that integrates these and other challenging aspects of geriatric medical care with appropriate oncological treatment [10].

Representing perhaps only 2% of patients currently in randomized studies [11], there has also been a serious lack of enrollment of elderly patients (age >70 years) in cancer clinical trials due to exclusions for comorbid illnesses, low-cognitive functioning, or other age-related concerns. Subsequently, empirical data on this population, such as prevalence rates and treatment preferences, is almost non-existent [12]. However, Geriatric Oncology is an emerging discipline and is recognized as such by the American Society of Clinical Oncology (ASCO) and the American Association for Cancer Research (AACR). It is also a high-priority target for the National Cancer Institute (NCI). Elderly patients with cancer are seen by geriatricians and oncologists on a daily basis, with relatively little pertinent research to guide treatment choices or to assess influential factors such as functional status and comorbidities.

Thus, comprehensive studies documenting cancer prevalence, comorbidities, and treatment strategies are urgently needed to improve current treatments being provided to geriatric oncology patients. The Cancer in the Oldest: Prevalence, Related-Illnesses and Treatment Modalities (COPIT) study

established a large national cohort of older veterans, with the primary objective to examine variations in the prevalence, medical comorbidities and treatment modalities of four commonly diagnosed cancers among Veterans Affairs (VA) patients aged 70 and older.

2. Methods

This cross-sectional study presents a secondary data analysis of administrative data collected by the Veterans Health Administration (VHA). It was approved by the local institutional review board prior to commencement. Eligibility criteria for the study population were age 70 years or older, receiving VA care during fiscal year 2005 (1 October 2004–30 September 2005), and diagnosed with at least one of the four cancers of interest: lung, colorectal, head and neck, or prostate. Patient data were extracted on inpatient stays, including surgeries/procedures in VA hospitals and extended care facilities, and outpatient procedures during the fiscal year. The VA employs an all-electronic medical record, from which standardized extracts are retrieved nightly and added to cumulative, national databases in biweekly updates. Missing data on utilization and diagnosis data is extremely rare. Pathology data are not available. Available data include patient demographics such as age, race/ethnicity (recoded as white, black, other specified race, unknown race), and marital status. All records in the national databases use unique patient identifiers that are consistent across record types and years. For this study, utilization of non-VA healthcare services (i.e., out-of-system use) was not assessed.

We defined cancer type from inpatient or outpatient diagnoses. Comorbid medical and psychiatric conditions examined included depression, Alzheimer’s and other dementias, osteoarthritis, dyspepsia/peptic ulcerative disease, hypertension, hyperlipidemia, heart disease, diabetes, pneumonia and chronic obstructive pulmonary disease (COPD), and a group of frailty conditions used in previous work [13,14]. Treatment modalities included surgery, chemotherapy, and radiation therapy. See Appendix A for a list of all ICD9, ICD9A, and CPT codes used to define cancer type, comorbid conditions, and treatment modalities. Within the geriatric oncology cohort, we examined the prevalence rates for each cancer type, patient demographics, comorbidities, and receipt of definitive cancer treatment. Bivariate comparisons by age group (70–84 versus 85+) were conducted with chi-square analysis using SAS 9.1.3 (copyright 2002–2003, SAS Institute Inc., Cary, NC).

3. Results

Out of a total population of just over 1.9 million VA patients aged 70–115 years receiving care in 2005, the COPIT cohort totaled 194,797 patients (mean age 77.8 years, SD 5.0); 99.6% were male, 69% were currently married with

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