Commentary (Muss): Management of Cancer in the Elderly

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By Hyman B. Muss, MD [5]

With the aging of the Western population, cancer in the older person is becoming increasingly common. After considering the relatively brief history of geriatric oncology, this article explores the causes and clinical implications of the association between cancer and aging. Age is a risk factor for cancer due to the duration of carcinogenesis, the vulnerability of aging tissues to environmental carcinogens, and other bodily changes that favor the development and the growth of cancer. Age may also influence cancer biology: Some tumors become more aggressive (ovarian cancer) and others, more indolent (breast cancer) with aging. Aging implies a reduced life expectancy and limited tolerance to stress. A comprehensive geriatric assessment (CGA) indicates which patients are more likely to benefit from cytotoxic treatment. Some physiologic changes (including reduced glomerular filtration rate, increased susceptibility to myelotoxicity, mucositis, and cardiac and neurotoxicity) are common in persons aged 65 years and older. The administration of chemotherapy to older cancer patients involves adjustment of the dose to renal function, prophylactic use of myelopoietic growth factors, maintenance of hemoglobin levels around 12 g/dL, and proper drug selection. Age is not a contraindication to cancer treatment: With appropriate caution, older individuals may benefit from cytotoxic chemotherapy to the same extent as the youngest patients.

In his concise and to-the-point review, Dr. Balducci covers key principles that should govern our approach to cancer in older patients. Although we are uncertain as to why the incidence of cancer increases with aging, there is no question that it does. This observation has major implications. First, in affluent nations such as the United States, we are living longer and the absolute number and percentage of our population who are elderly continue to increase. Second, treating cancer is an expensive endeavor, and with an increased incidence in older patients as well as more elderly at risk, more and more resources will be needed to care for these patients. Last, most oncologists have little training in caring for older patients and cannot accurately predict the role of comorbidity and its effect on treatment and life expectancy.

Dr. Balducci has also provided us with a wonderful history of geriatric oncology. When I finished my oncology fellowship in 1974, I was unaware of cancer issues in elders. Much has happened. No endeavors thrive without passionate leaders, and Drs. Paul Calabresi, B.J. Kennedy, William Hazzard, Jerome Yates, Rosemary Yancik, John Bennett, and Lodovico Balducci are just a few of the pioneers who have championed cancer care in elders. Numerous other groups both in the United States and elsewhere have also been instrumental in establishing geriatric oncology as a major area of cancer research. The John A. Hartford foundation has been most supportive, as has the National Institute of Aging, the National Cancer Institute, the American Geriatric Society, the American Society of Clinical Oncology, and the American Association of Cancer Research. More recently, the development of multidisciplinary consortia has added to the critical mass of research support including the Geriatric Oncology Consortium and the International Society of Cancer Research.

Much has come from these efforts. We now have major trials focused on cancer in elders, federal grant support for laboratory and translational research, and a fertile training ground for future geriatric oncologists. We have come far, but we have far to go. I will discuss below some of the key issues facing us now in this emerging and rapidly expanding field of geriatric oncology.

Prevention and Screening
That fact that cancer incidence increases with age mandates that appropriate prevention and screening strategies be optimized. Smoking cessation and moderation in the use of alcohol are just as important in older as in younger patients. Likewise, screening mammography, Papanicolaou tests, and sigmoidoscopy and colonoscopy all have a role in the screening of older patients to detect breast, cervical, and colorectal cancer at an early, more likely curable stage.
Like all prevention and screening strategies, there is a need for balance and common sense when applying this technology to older patients. Frail patients and those with significant comorbidity are unlikely to gain from prevention and screening; in fact, detecting an early cancer in such an individual may be unimportant or even detrimental. Finding a small breast cancer in an 83-year-old woman with dementia and cardiac disease is not a diagnostic coup. Prevention and screening strategies are best used in patients with a reasonable life expectancy—at least 5 years, in my opinion. In elders with a serious disease before the diagnosis of cancer, a new diagnosis of cancer might be a comorbidity with much less impact than an active non-cancer-related illness.

Treatment of Potentially Curable Cancer in Older Patients

Once cancer is diagnosed in an elderly patient, the oncologist is faced with a major challenge. The majority of older patients with cancer will have a "solid tumor," most commonly lung, colorectal, breast, or prostate cancer. Except for prostate cancer, surgery is frequently the mainstay of early treatment. A large body of literature consistently shows that older patients who are in reasonable health tolerate surgery—including the risks of operative and perioperative mortality and complications—as well as younger patients.[1] Likewise, radiation is well tolerated in healthy older adults and is a key component of therapy for breast cancer patients undergoing breast-conservation therapy as well as patients with rectal cancer, head and neck cancer, and many patients with prostate cancer.[2]

The use of adjuvant systemic therapy is more complicated, and assessing the role of comorbidity is a key part of the treatment decision.[3] As Dr. Balducci has stressed, comprehensive geriatric assessment can be most helpful and should be considered for any patient with significant comorbidity or in cases where the oncologist has concerns about treatment tolerance. As a general rule, older patients in good health with breast and colorectal cancer treated with systemic adjuvant therapies can achieve the same proportional reductions in risk of relapse and cancer-related mortality as younger patients. Overall survival, however, is almost always lower in elders due to the higher probability of dying of non-cancer-related causes as age increases.

For breast and colorectal cancer, Web-based models are available that factor in risk of recurrence, treatment benefit, and expected survival based on the patient's age. Such programs can be of great help in assessing the benefits of adjuvant treatment (see www.adjuvantonline.com). More detailed models that factor in specific comorbid conditions and how they might affect treatment outcomes are needed. For older patients with leukemia and lymphoma, the issues are different. As Dr. Balducci has pointed out, older patients with acute myelogenous leukemia and intermediate- and high-grade lymphoma are less likely to benefit from chemotherapy than younger patients. Nevertheless, healthy older patients with these malignancies should still be offered state-of-the-art treatments. Irrespective of tumor type, declines in renal function and a decreased marrow reserve with aging need to be considered, and chemotherapy doses should be adjusted for major loss of function. Likewise, growth factors appear to be as effective in older patients as in younger patients and can minimize the risk of myelosuppression, neutropenic fever, and anemia when used appropriately.

Treatment of Metastatic Cancer

For older patients as well as younger patients with metastatic solid tumors, the major goals of treatment are maintenance of the highest possible quality of life and control of metastases. Endocrine therapies can be effective for patients with metastatic cancers of the breast, prostate, and endometrium. Such therapy is well tolerated and side effects generally modest. The main issue in older patients is the decision to initiate a trial of chemotherapy. Studies in almost all solid tumor types indicate that older patients in good general health tolerate single-agent and most standard combination chemotherapy regimens almost as well as their younger counterparts. Several newer agents, including biologics, have much more favorable toxicity profiles and can be considered even in frailer patients or those with moderate comorbidity. Older patients with metastases should be made aware of their treatment options and offered chemotherapy if the benefits outweigh the risks.

The Future

In the United States, our track record for entering cancer patients in clinical trials is woefully poor, and this is even more so for elders.[4] Increasing the accrual of older patients to ongoing trials is essential if we are to get a large enough database to define the benefits of newer treatments in the entire cancer population. For elders in such trials, it will be important to assess the effects of comorbidity on toxicity as well as survival.
It would be most helpful to have an accurate, short, and validated geriatric assessment tool for older patients on trials to explore the role of other important domains that may affect toxicity and life expectancy. Such domains include assessment of medical conditions and geriatric syndromes, cognitive function, anxiety and depression, function and the living environment, economics, and spiritual and social support.[5] A short, mostly self-administered comprehensive geriatric assessment instrument is now being tested in the clinical trial setting.[6]

In addition, trials focused on elderly patients are needed; even for many commonly used and potentially curative treatments, few data exist for older patients. In spite of the compelling epidemiologic data, I believe there is still a lack of awareness as to the physical, emotional, and financial costs of cancer in older patients. Education of the public, our patients, and all physicians is mandatory if we want to provide the cancer care that our elders need and deserve.

—Hyman B. Muss, MD

Disclosures:
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References:


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