The underfunding of lung cancer research

Onkar Khullar, MD, and Yolonda L. Colson, MD, PhD

Despite major advances in the field of oncology in research, diagnostic methods, and treatment modalities, lung cancer remains the leading cause of cancer death in the United States among both men and women. With an estimated 215,020 new cases and 161,840 deaths in 2008, lung cancer is responsible for more than 25% of all cancer deaths.^{1,2} Given these alarming statistics, one would assume that lung cancer research would be a priority for funding. Surprisingly, this could not be further from the truth. In terms of research funding, lung cancer is all but forgotten.

Various government agencies fund cancer research, including the National Institutes of Health (NIH) and National Cancer Institute (NCI), the Department of Defense (DOD), and the Centers for Disease Control and Prevention (CDC). Of the \$5.570 billion in NIH funding for all cancer research in 2008, \$726 million was granted for breast cancer, \$290 million for prostate cancer, and \$274 million for colorectal cancer. Unfortunately, only \$169 million was spent on research for the number one cancer killer, lung cancer.³ Similarly, in 2008 the DOD sponsored \$138 million to fund breast cancer research, \$80 million for prostate cancer, and \$10 million for ovarian cancer. Meanwhile, lung cancer was given no designated funding.⁴ Fortunately, recent advocacy has resulted in the funding of a new \$20-million Lung Cancer Research Program through the DOD for fiscal year 2009. Nonetheless, overall federal research funding per cancer death remains 21 times greater for breast cancer and 13 times greater for prostate cancer than for lung cancer research.

This alarming disparity is not simply isolated to cancer research funding but also extends to lung cancer prevention and control, where a surprising two thirds of the \$300,000 earmarked by the CDC is allocated to breast and cervical cancer while only \$100,000 of the CDC budget is focused on smoking cessation.⁵ No CDC dollars are earmarked for prevention of lung cancer aside from smoking cessation, and although smoking cessation is extremely important, it is not appropriate to assume that it is the cure for all lung cancer, anymore than it is the cure for all cases of coronary artery disease or stroke. The average person with lung cancer stopped smoking nearly a decade before the development of lung cancer, and the incidence of lung cancer among nonsmokers is estimated to be as high as 30,000 to 50,000 cases/year.^{6,7}

Our point is not that the funding for breast and prostate cancer is undeserved—cancer is a devastating disease, regardless of the location—rather, it is critical to call attention to the disparity in lung cancer funding and its effects on patients with lung cancer. Nowhere is the disparity in the “war against cancer” more obvious than in survival. From 1999 to 2005, the 5-year survival for all cancers combined was 66%: 89% for breast cancer, 99% for prostate cancer, and a dismal 16% for lung cancer. Furthermore, from 1975 to 2005, the 5-year survivals improved by 15% for breast cancer, 30% for prostate cancer, and a mere 3% for lung cancer.¹

The urgency to obtain more funding for lung cancer research has never been greater, as this disease accounts for more deaths than breast, prostate, colorectal, liver, and ovarian cancers combined. During the past 30 years, there has been minimal improvement in lung cancer mortality.^{1,8} The lack of effective funding for lung cancer research has significantly hindered the ability of researchers to elucidate the pathogenesis behind this disease process and to find effective cures for smokers and nonsmokers alike. Yet lung cancer is not hopeless; we should not abandon these patients. Akin to the advances in breast cancer during the past 35 years, recent identification of specific gene mutations within lung cancers also promises to yield both prognostic and therapeutic benefits, particularly if appropriate research funding is made available. Lung cancer needs to be brought to the forefront of the nation’s research agenda and to be supported with representative levels of funding. It is time to address this forgotten malignancy, the number one cancer killer in America, and turn our collective research focus toward a cure for lung cancer.

References

1. Horner MJ, Ries LAG, Krapcho M, Neyman N, Aminou R, Howlander N, et al (eds). SEER cancer statistics review, 1975-2006 [monograph on the internet]. Bethesda (MD): National Cancer Institute; updated 2009 April 15 [cited 27 May 2009]. Available from: http://seer.cancer.gov/csr/1975_2006/
2. Jemal A, Siegel R, Ward E, Hao Y, Xu J, Murray T, et al. Cancer statistics, 2008. *CA Cancer J Clin*. 2008;58:71-96.
3. National Institutes of Health [homepage on the Internet]. Bethesda (MD): The Institutes; updated 2009 May 7 [cited 27 May 2009]. Estimates of funding for various research, condition, and disease categories (RCDC). Available from: <http://report.nih.gov/rcdc/categories/>
4. Department of Defense [homepage on the Internet]. Washington: The Department; updated 2008 Feb 15 [cited 29 May 2009]. Congressionally directed medical research programs. FY 2008 Annual Report. Appendix B: fiscal years 2007 and 2008. Available from: http://cdmrp.army.mil/annreports/2008annrep/pdf/appendix_b.pdf
5. Centers for Disease Control and Prevention [homepage on the Internet]. Atlanta: The Centers [cited 19 Nov 2008]. FY 2008 President’s budget Centers for Disease Control and Prevention detail table. Available from: http://www.cdc.gov/fmo/PDFs/FY_2008_Presidents_Budget_Detail_Table.pdf
6. Thun MJ, Henley SJ, Burns D, Jemal A, Shanks TG, Calle EE. Lung cancer death rates in lifelong nonsmokers. *J Natl Cancer Inst*. 2006;98:691-9.
7. Wakelee H, Chang E, Gomez S, Keegan TH, Feskanich D, Clarke CA, et al. Lung cancer incidence in never smokers. *J Clin Oncol*. 2007;25:472-8.
8. Boring CC, Squires TS, Tong T. Cancer statistics, 1991. *CA Cancer J Clin*. 1991;41:19-36. Erratum in: *CA Cancer J Clin*. 1991;41:111.

From the Division of Thoracic Surgery, Brigham and Women’s Hospital, Harvard Medical School, Boston, Mass.

Received for publication May 5, 2009; accepted for publication May 5, 2009.

Address for reprints: Yolonda L. Colson, MD, PhD, Division of Thoracic Surgery, Department of Surgery, Brigham and Women’s Hospital, 75 Francis St, Boston, MA 02115 (E-mail: ylcolson@bics.bwh.harvard.edu).

J Thorac Cardiovasc Surg 2009;138:275

0022-5223/\$36.00

Copyright © 2009 by The American Association for Thoracic Surgery

doi:10.1016/j.jtcvs.2009.05.001