

industry-related marketing of services,² both of which are unrelated either to excise taxes or insurance coverage. Third, regional differences in health care utilization in general and in utilization of high-cost elements in particular challenge extrapolations from Massachusetts alone.³ Sorensen's prediction about the effects of the ACA is also undermined by evidence from an ongoing randomized natural experiment in Oregon, which showed that expanding insurance coverage led to enhanced utilization of at least one type of imaging, since the use of mammography in women who were 50 years of age or older increased by nearly 30%.⁴

We appreciate Sorensen's clarification that sales to government and nonprofit entities, which ordinarily are exempt from taxation, are not exempt from this specific excise tax. This point has been clarified in the online version of our article.

Daniel B. Kramer, M.D.

Beth Israel Deaconess Medical Center
Boston, MA

Aaron S. Kesselheim, M.D., J.D.

Brigham and Women's Hospital
Boston, MA

Since publication of their article, the authors report no further potential conflict of interest.

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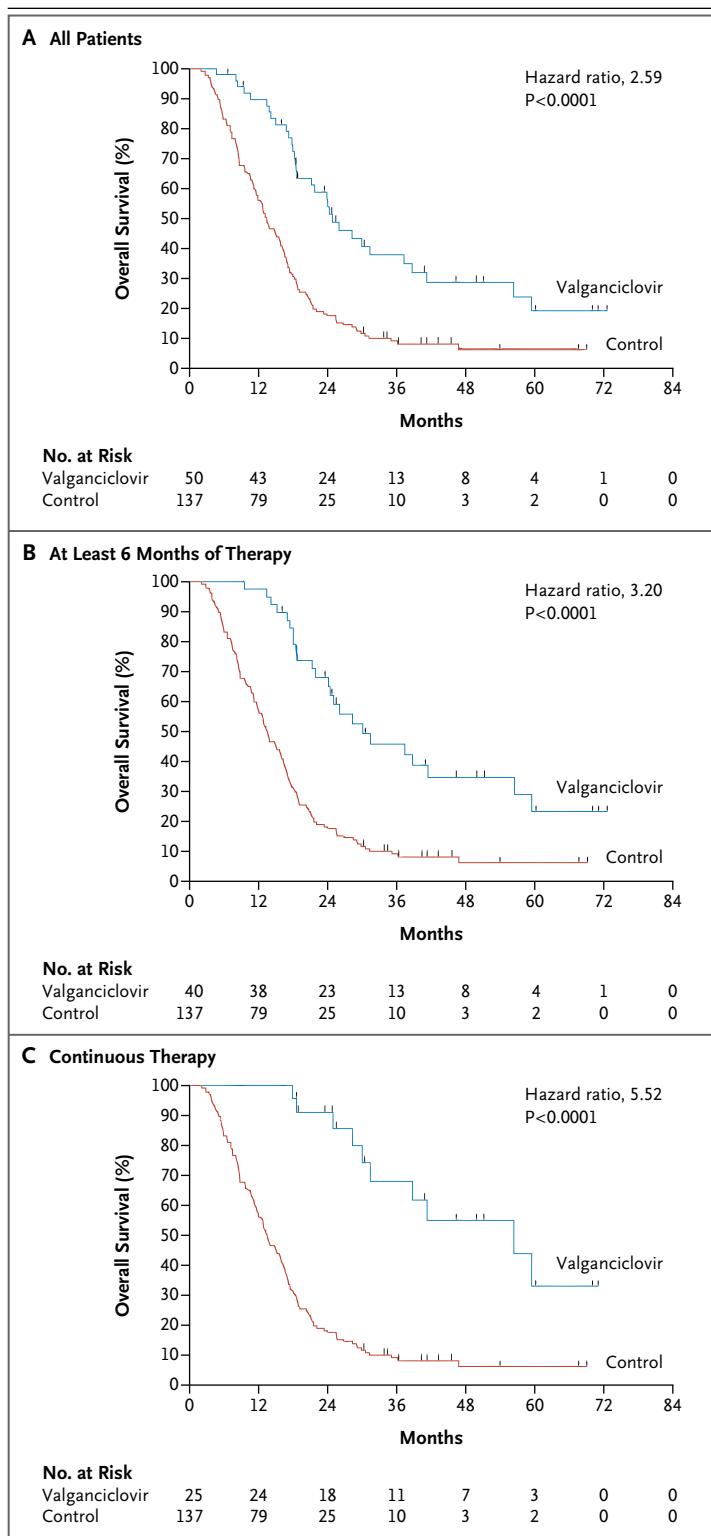
Survival in Patients with Glioblastoma Receiving Valganciclovir

TO THE EDITOR: Cytomegalovirus (CMV) DNA and proteins are expressed in several types of human cancers and metastases¹ but not in healthy surrounding tissues, suggesting a possible role for the virus in the cancer.² The malignant brain tumor glioblastoma has a dismal prognosis, with a median overall survival of 12 to 14 months and a 2-year survival of 15 to 26%. We examined more than 250 cases of glioblastoma (Fig. S1 in the Supplementary Appendix, available with the full text of this letter at NEJM.org). Of these patients, only 1 was CMV-negative. Of the 75 patients we evaluated, the median rate of overall survival was 33 months in those with low-grade CMV infection and 13 months in those with high-grade CMV infection ($P=0.04$); the median rates of 2-year survival were 63.6% and 17.2%, respectively ($P=0.003$),³ which suggests that CMV affects tumor progression.

In an animal model, anti-CMV treatment reduced the growth of medulloblastoma by 72%.⁴ In the Valcyte Treatment of Glioblastoma Patients in Sweden (VIGAS) study,⁵ a double-blind clinical trial of valganciclovir involving 42 patients with glioblastoma, we found that tumor growth (the primary end point) was not significantly reduced at 3 and 6 months after surgery. However, in exploratory analyses, 22 patients receiving at least 6 months of antiviral therapy, as compared with contemporary controls, had an increased rate of

2-year survival (50% vs. 20.6%, $P<0.001$) and increased median overall survival (24.1 vs. 13.7 months, $P=0.003$). The ethics committee approved the experimental treatment protocol for patients enrolled in the VIGAS study. Owing to the promising results of this study, 28 patients at our hospital have received anti-CMV therapy for compassionate use in addition to their standard therapy (Section S2 in the Supplementary Appendix). Patients in the VIGAS study and those who were treated for compassionate use provided written informed consent for analyses of biologic samples and outcomes. Approval by the institutional review board was not required.

Here we present current retrospective data on 50 patients with glioblastoma who received valganciclovir as an add-on to standard therapy at Karolinska University Hospital as adjuvant treatment (Section S2 in the Supplementary Appendix). The rate of survival of treated patients was remarkably high: at 2 years, 62% were alive, as compared with 18% of contemporary controls with a similar disease stage, surgical-resection grade, and baseline treatment ($P<0.001$) (Fig. 1A, and Table S1 in the Supplementary Appendix). The median overall survival was 25.0 months, as compared with 13.5 months in the controls ($P<0.001$). The median survival was higher among 40 patients who received at least 6 months of valganciclovir; their 2-year rate of survival was 70%,



and their median overall survival was 30.1 months ($P<0.001$) (Fig. 1B). The survival rate was highest among 25 patients who received continuous valganciclovir treatment after the first 6 months,

Figure 1. Kaplan–Meier Estimates of Overall Survival in Patients with Glioblastoma Receiving Antiviral Therapy against Cytomegalovirus (CMV).

Shown are estimates of overall survival for patients with glioblastoma who received valganciclovir for anti-CMV therapy and for 137 contemporary controls with glioblastoma who received similar baseline therapy. The patients receiving valganciclovir included 50 who received at least 1 dose of the drug (Panel A), 40 who received more than 6 months of therapy (Panel B), and 25 who received at least 6 months of therapy and thereafter received continuous treatment with valganciclovir (Panel C).

with a 2-year survival rate of 90% and median overall survival of 56.4 months ($P<0.001$) (Fig. 1C). It is unlikely that any bias in patient selection could have resulted in these high rates of survival. Our results highlight the need for a randomized trial targeting CMV in patients with glioblastomas.

Cecilia Söderberg-Nauclér, M.D., Ph.D.

Afsar Rahbar, Ph.D.

Giuseppe Stragliotto, M.D., Ph.D.

Karolinska Institutet
Stockholm, Sweden
cecelia.naucler@ki.se

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CORRECTION

Cinacalcet for Cardiovascular Disease in Patients Undergoing Dialysis (May 9, 2013;368:1842-5). The disclosure statement for the letter from Goldsmith and Lamb (page 1843) should have read, “Dr. Goldsmith reports receiving consulting and lecture fees from Amgen, Abbott, and Sanofi. No other potential conflict of interest relevant to this letter was reported,” rather than “No potential conflict of interest” The letter is correct at NEJM.org.