Time to Unveil the Risk of Imaging to Patients

Despite the increased attention to the radiation risks of computed tomographic scans, this Research Letter by Caverly et al illustrates that most patients who are undergoing imaging tests are not aware of the associated risks of radiation exposure. It is likely that many physicians also do not know the risks, and so it is not surprising that even when there are discussions with patients about risks and benefits of the procedure, patients clearly still do not understand the true risk of radiation exposure. If we are to achieve optimal shared decision making on the decision to undergo imaging studies, much work needs to be done in educating physicians on the magnitude of radiation used for commonly used computed tomographic scans and the risks of radiation exposure so that we can unveil the true risk of imaging radiation exposure to our patients. This information, presented in a way that assures patient understanding of the risks, should be part of every discussion surrounding the decision to image.

Patrick G. O’Malley, MD, MPH
Results. See eTable 1 (http://www.jamainternalmed.com) for patient characteristics. Forty-seven percent of usual care patients and 39% of GMC patients incurred 1 inpatient admission or more during our study period. Mean expenditures are given in eTable 2. Group medical clinic patients had a lower estimated probability of an inpatient admission compared with usual care patients 13 to 18 months after the trial (Table). Estimated mean outpatient expenditures were similar between arms during and after the trial, while estimated mean total expenditures for the GMC patients were significantly lower ($7504; 95% CI, $14 286 to $721; P = .003) 13 to 18 months after the trial owing to lower observed inpatient admissions during the same period (Table and eFigure 1). A sensitivity analysis of the probability of inpatient admissions with a primary diagnosis related to diabetes, cardiovascular disease, or renal disease7 showed similar results.

The 239 patients in this GMC trial had a mean of 25.4 SBP values, 8.1 HbA1c values, and 6.1 LDL-C values obtained during routine clinic visits over the 42-month observation period. Trends in clinic SBP values diverged from baseline to become significantly lower (relative improvement of 3.1 mm Hg; 95% CI, −5.3 to −0.9 mm Hg; P = .007) for GMC compared with usual care patients by the end of the 12-month trial. This improvement was sustained for the first 6 months after trial completion (estimated SBP was 3.1 mm Hg lower [95% CI, −5.8 to −0.4 mm Hg; P = .03] for GMC compared with usual care patients). However, relative improvement in clinic SBP declined for GMC patients compared with usual care patients (18 months after the trial, 0.8 mm Hg lower [95% CI, −5.7 to 4.2 mm Hg; P = .76]). Estimated HbA1c and LDL-C trends were similar between arms over the entire study period (eTable 3 and eFigure 2).

Comment. To our knowledge, this is the first study to examine the long-term economic and clinical posttrial impacts of GMCs. We found that GMC patients had significantly lower probability of inpatient admission and total expenditures than usual care patients 13 to 18 months after trial completion.

Clinically meaningful improvements in BP may have led to risk reduction substantial enough to translate into lower health expenditures by forestalling cardiovascular events requiring hospitalization, which is consistent with United Kingdom Prospective Diabetes Study (UKPDS), which showed that tight BP control resulted in lower 10-year risk of peripheral vascular disease for...
the subset of UKPDS patients with uncontrolled diabetes and hypertension. The Steno-2 follow-up study found that intensive control of BP, HbA1c, and LDL-C among patients with diabetes and persistent microalbuminuria reduced cardiovascular-related adverse event and death rates 5.5 years after trial completion. It is also possible that resource use declined because GMC patients learned to address health concerns directly with their usual physicians; GMC patients self-reported significantly greater confidence in managing diabetes at the completion of the trial compared with usual care.

George L. Jackson, PhD, MHA
David Edelman, MD, MHS
Maren K. Olsen, PhD
Valerie A. Smith, MS
Matthew L. Maciejewski, PhD

Caffeine Content of Dietary Supplements Consumed on Military Bases

Excessive caffeine consumption, particularly when combined with other stimulants, may increase the risk of hypokalemia, rhabdomyolysis, and other heat-related injuries among athletes and military personnel. Caffeine is consumed in a wide range of popular items including coffee, teas, sodas, energy drinks, energy gels, chocolate, gums, and over-the-counter medications. Dietary supplements, which are commonly consumed by military personnel, are a poorly characterized source of caffeine. Only with accurate information about the quantity of caffeine in dietary supplements can consumers and clinicians be assured of safe use. As part of an ongoing multidisciplinary collaboration to promote dietary supplement safety, we analyzed some of the most popular supple-

Published Online: March 11, 2013. doi:10.1001/jamainternalmed.2013.2803

Author Affiliations: Center for Health Services Research in Primary Care, Durham Veterans Affairs Medical Center (Drs Jackson, Edelman, Olsen, and Maciejewski and Ms Smith), and Division of General Internal Medicine (Drs Jackson, Edelman, and Maciejewski), Department of Biostatistics and Bioinformatics (Dr Olsen), Duke University Medical Center, Durham, North Carolina.

Correspondence: Dr Jackson, Durham VA Medical Center, Health Services Research & Development Service (152), 508 Fulton St, Durham, NC 27705 (george.l.jackson@duke.edu).

Author Contributions: Study concept and design: Jackson, Edelman, Olsen, and Maciejewski. Acquisition of data: Jackson, Smith, and Maciejewski. Analysis and interpretation of data: Jackson, Edelman, Olsen, Smith, and Maciejewski. Drafting of the manuscript: Jackson and Maciejewski. Critical revision of the manuscript for important intellectual content: Jackson, Edelman, Olsen, Smith, and Maciejewski. Statistical analysis: Olsen, Smith, and Maciejewski. Obtained funding: Jackson and Maciejewski. Administrative, technical, and material support: Jackson and Maciejewski. Study supervision: Jackson.

Conflict of Interest Disclosures: Dr Maciejewski has received consultation funds from Takeda Pharmaceuticals, Novartis, and the Surgical Review Corporation and owns stock in Amgen.

Funding/Support: This research was funded by the Quality Enhancement Research Initiative (QUERI) of the Department of Veterans Affairs (VA) Health Services Research & Development (HSR&D) Service (RRP-09-407). The Group Visits Trial was funded by VA HSR&D (IIR-03-084). Dr Maciejewski is supported by a VA HSR&D Research Career Scientist Award (RCS-10-391).

Role of the Sponsors: The QUERI and HSR&D of the VA had no role in the design, conduct, collection, management, analysis, or interpretation of the data; or in the preparation, review, or approval of the manuscript.

Trial Registration: clinicaltrials.gov Identifier: NCT00286741

Disclaimer: The views expressed in this article are those of the authors and do not necessarily reflect the position or policy of the VA, the US government, or Duke University.

Previous Presentations: Preliminary results were presented at the VA HSR&D National Meeting; February 17, 2011; National Harbor, Maryland; and at the Academy-Health Annual Research Meeting; June 12, 2011; Seattle, Washington.


Additional Contributions: Substantial contributions were also provided by Hayden B. Bosworth, PhD; Benjamin J. Powers, MD, MHS; and Miriam A. Kaufman, MSW. The initial Group Visits Trial was led by Dr Edelman (principal investigator), Morris Weinberger, PhD (co-principal investigator), and Sonja K. Fredrickson, MD (site principal investigator). Cynthia J. Coffman, PhD, provided an important review of an earlier draft of the manuscript.


©2013 American Medical Association. All rights reserved.