

The accompanying editorial by Budoff and Gupta appropriately points out the major flaws of this study. Here are some additional thoughts in response to your questions:

1) What are your thoughts about this study?

The findings of this study should be interpreted with great caution. The use of United Healthcare insurance data, the financial relationship of some of the authors with the insurance industry, and the odd choice of verbiage throughout this contribution speaking of “health care markets” instead of patients suggest considerable bias and influence from the health insurance industry, who have a vested interest in decreasing the number of advanced imaging procedures.

2) What are your impressions about these findings?

As in many previous publications on the same topic, the authors raise the specter of radiation risk in disregard of the benefit that patients receive from disease detection and appropriate treatment. It is by no means a certainty, that the assumptions involved with BEIR VII modeling (which are based on the cataclysmic radiation exposure of atomic bomb survivors) are appropriate and applicable in the context of radiation from medical imaging. Even if one assumes these extrapolations to be correct, current cardiovascular disease statistics clearly show that the risk of developing cancer from a medical imaging procedure pales compared with the likelihood of dying from unrecognized cardiac disease.

3) Are there ways to reduce the amount of exposure to radiation?

Over the last few years we have made great strides in reducing radiation from cardiac imaging. Increasingly, nuclear perfusion imaging studies are performed with stress-only protocols, which substantially decrease radiation exposure. Cardiac CT has seen dramatic refinements over the last few years, with a good majority of studies now performed with radiation saving techniques that expose patients to a fraction of radiation which was previously required. The most recent CT scanner generations routinely enable cardiac CT image acquisition with an effective radiation dose of less than 2 milliSievert. Accordingly, even if the use of cardiac CT is dramatically on the rise, as projected by the authors, a substantial increase in radiation exposure to the population as a whole is not to be expected. As in previous work, the authors are using outdated data to enhance the perceived significance of their write-up.

4) These are all well-known procedures -- does this study sound any alarm bells about these procedures?

The most recent healthcare statistics show a dramatic decrease in mortality from cardiovascular diseases. This welcome decrease is attributed to the massive advances that have been made over the last decades in the management of cardiovascular disease, of which imaging is an integral component. Conversely, the disease statistics fail to demonstrate a concomitant increase in cancer deaths, which have equally declined over the last decade. Thus, the conclusion that increased use of advanced imaging bears the risk of rising cancer deaths seems unjustified. In this context, it is interesting to note that a 2009 study by the National Bureau of Economic Research ([link below](#)) found that life expectancy increased more rapidly in states that experienced larger increases in utilization of advanced medical imaging, but that those same

states did not have larger increases in per capita medical expenditure.

http://www.healthimaging.com/index.php?option=com_articles&view=article&id=17808