

DIAGNOSIS

High use of noninvasive imaging tests not associated with short-term benefit

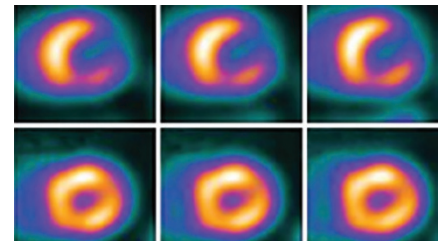
“With health-care costs at unsustainably high levels, our team feels the urgency to explore ways in which hospitals and health-care systems can be more efficient in providing high-quality patient care,” says Dr Kyan Safavi from the Yale University School of Medicine in New Haven, CT, USA. “We believe that hospitals ... will be eager to know: are the resources that they are employing on an everyday basis to take care of patients clearly adding to the value of patient care?” A new study by Safavi and colleagues suggests that, in US hospitals with a high use of noninvasive cardiac imaging testing in patients with suspected myocardial ischaemia, the answer to this question might be “no”. More-frequent use of these imaging tests was associated with a higher rate of inpatient admission and greater use of downstream diagnostic tests, but no evidence of a beneficial effect on short-term patient outcome.

Safavi and colleagues assessed data for hospital visits to 224 US hospitals in 2010. Among the 549,078 patients for whom cardiac ischaemia was considered as the primary diagnosis, the investigators determined the proportion of patients who underwent noninvasive cardiac imaging tests for ischaemia at each hospital. The variation in use of imaging in this setting was large, ranging from 0.2% to 55.7% (median 19.8%). Hospital characteristics such as number of beds, availability of observational beds, teaching status, and whether they were located in an

urban or rural area, did not correlate with the rate of noninvasive cardiac imaging.

Compared with hospitals in the quartile with the lowest imaging rates, more patients were admitted to inpatient beds (40.0% vs 32.1%) and more downstream angiography was performed (4.9% vs 1.2%) in hospitals in the quartile with the highest use of noninvasive imaging tests. Although more revascularization procedures were also performed at these hospitals (1.9% vs 0.5% in the quartile with the lowest imaging use), the revascularization yield per imaging study was lower (5.4% vs 7.6%). Moreover, within the same month or in the month after the index hospital visit, hospitals in the quartile with the highest use of noninvasive imaging tests readmitted a similar proportion of patients for acute myocardial infarction as hospitals with lower rates of imaging (0.3% for all quartiles).

In their study report, the investigators speculate that “one potential explanation for unchanged outcomes despite higher rates of cardiac imaging is that hospitals that use imaging more frequently are doing so in patients for whom the benefit is not clear”. They also point out that “clinical guidelines do not clearly identify which patients among the heterogeneous group presenting with suspected myocardial ischaemia should receive cardiac imaging” and that “without a strong evidence base to inform guideline development, the choice of which patients are likely to benefit from imaging might not be readily apparent”.



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“We need to [practise] smart medicine, eliminating wasteful practices and focusing on actions that lead to improved outcomes for patients,” says Dr Harlan Krumholz, senior author on the study report. To this end, Dr Krumholz says that he and his team are “developing strategies with massive data collections to identify where the best opportunities [exist] to improve practice”. They plan to collaborate with various hospitals and health-care systems to test their strategies in the future. “We are determined to share our data with hospitals in a meaningful way, so that our findings serve as one guidepost as they attempt to navigate the difficult task of providing excellent care to their patients while simultaneously taking on the responsibility of controlling the exorbitant cost of our health-care system,” says Dr Safavi.

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Original article Safavi, K. C. *et al.* Hospital variation in the use of noninvasive cardiac imaging and its association with downstream testing, interventions, and outcomes. *JAMA Intern. Med.* doi:10.1001/jamainternmed.2013.14407