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In reply

We recently reported that approximately one-third of all imaging studies for pulmonary embolism (PE) are potentially avoidable based on a National Quality Forum endorsed performance measure. Inherent in the construction of any performance measure is the assumption that the care of patients can be simplified into necessary/avoidable, appropriate/inappropriate, good/bad. This simplification is readily apparent when we attempt to measure quality in the diagnosis of undifferentiated patients with potentially dangerous, nonspecific complaints. Dr Goodman is correct when he says that patients present for “signs/symptoms needing a rapid explanation,” rather than a “PE diagnosis.” However, we disagree with his tacit conclusion that any attempt to measure appropriateness in complex patients is therefore futile. Rather than concluding that quality can only be measured at the level of an individual patient, we believe that results such as ours should be used to balance the potentially endless pursuit of diagnostic certainty against the risk that overtesting poses to our patients and the health care system.

It is true that the symptoms of PE overlap with many other diseases and clinicians sometimes want reassurance (for their patients, or themselves) that they have ruled out alternative diagnoses at the same time as PE. However, only approximately 15% of PE computed tomography (CT) scans demonstrate an actionable alternative diagnosis. This is if we consider all significant alternative diagnoses as justifying the CT and discount the possibility that the diagnosis could have been made using other methods. For alternative diagnoses commonly used to justify a CT (eg, pneumonia, malignancy), the marginal benefit of CT over less-ionizing procedures has been shown to be modest. Finding an alternative diagnosis on CT does not necessarily make the CT appropriate, but using alternative diagnoses to justify advanced imaging could support a shotgun approach to testing that fails to consider the adverse effects of radiation and contrast exposure.

Relative to many diagnoses, PE diagnostic pathways are evidence based and have been rigorously validated. The risks of overimaging are clear. We believe that physicians should be ethically bound to use available methods such as D-dimer assay to reduce CT imaging of healthy patients, and the medical community should support those physicians who attempt to limit testing based on high-quality data.

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gardless of antioxidant supplementation, mean (SEM) 6MWT distance improved significantly from 579 (33) m to 638 (26) m in men (P=.04) and from 511 (25) m to 564 (22) m in women (P=.001).

Improvement of more than 50 m in 6MWT distance, following a simple exercise protocol, is significant in different cardiopulmonary disease states. A Swedish study has shown that middle-aged and older men who increased their leisure time physical activity had better survival. The effect may have a 5- to 10-year delay and is similar in magnitude to the effect of smoking cessation.

We believe that it is time for a controlled intervention of moderate exercise in patients with stable coronary artery disease; improvements in the 6MWT performance can be used as a surrogate outcome.

In conclusion, we believe that patients with stable coronary artery disease will experience improved longevity when following a protocol of moderate-intensity walking for 30 minutes per day, but this requires evidence. The 6MWT is a valuable tool in future studies monitoring physical fitness and its relationship to reduction in cardiovascular events.

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In reply

Narotzki et al correctly point out that the 6-minute walk test (6MWT) can be used as an outcome measure for exercise training interventions. In a sample of 24 healthy older adults, they found that 30 minutes of daily moderate-intensity walking for 12 weeks improved 6MWT distance by 59 m among men and by 53 m among women. A change in walking distance of more than 50 m is thought to be clinically significant in most disease states.

Previous studies have also demonstrated that participation in exercise-based cardiac rehabilitation programs results in improvements in 6MWT distance among patients with coronary heart disease or heart failure. We anticipate that future investigations will further expand this knowledge to determine whether improvement in 6MWT performance reduces morbidity and mortality and whether using the 6MWT to monitor patients in clinical practice can improve cardiac outcomes.

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