

Future Directions for Nuclear Cardiology

Manuel D. Cerqueira, M.D.

*Professor of Medicine and Radiology
Director of Nuclear Cardiology,
Exercise Stress Testing,
and Cardiac Rehabilitation
Georgetown University Hospital, U. S. A.*

Nuclear Cardiology is an established, cost effective and respected diagnostic and prognostic noninvasive technique in the evaluation of patients with known or suspected coronary artery disease. The availability of technetium-99m-labeled radiotracers and the new capabilities of single-photon emission computed tomography(SPECT), offer improved imaging characteristics and provide the opportunity to perform first pass and gated acquisition to simultaneously obtain information on perfusion and ventricular function. The applications of gated SPECT for calculating ejection fraction, regional wall motion and improving artifact recognition will be reviewed as will attenuation correction methods. Although positron emission tomography(PET) offers superior technical imaging and radiotracer advantages over SPECT imaging for perfusion and metabolism, wide spread application has been restricted by limited availability and high cost, however, the use of positron radiotracers with SPECT cameras may allow the use of these superior isotopes at a lower cost. This clinically important capability will be reviewed.