

Preface



Mario J. Garcia, MD, FACC
Guest Editor

Patients with known or suspected coronary artery disease who are asymptomatic or who have stable symptoms are often evaluated noninvasively. Functional tests, such as stress electrocardiography, stress echocardiography, or stress nuclear perfusion imaging, detect and quantify the presence of ischemia based on electrical, mechanical, or perfusion abnormalities, indirectly establishing the burden of coronary artery disease. Although these tests have been shown to provide important prognostic information including the prediction of benefit from revascularization, they have limited accuracy for establishing or excluding the diagnosis of obstructive coronary artery disease.

More recently, multidetector CT has emerged as a tool to evaluate noninvasively the coronary anatomy. Multidetector CT has overcome many of its original limitations and now provides ECG-gated acquisition with short acquisition time, submillimeter spatial resolution, and adequate temporal resolution, allowing excellent visualization of the coronary arteries. Over the last 10 years, the rate of technologic advancements leading to improved coronary angiography with multidetector CT has rapidly exceeded those of other cardiac imaging modalities. Image quality is undergoing constant refinement, and the number of uninterpretable coronary studies has gradually decreased from 20% to 40% using four-detector,

to 15% to 25% with 16-detector, and is now as low as 3% to 10% with 64-detector systems. Although CT coronary angiography has demonstrated higher sensitivity for the detection of coronary artery disease than any other noninvasive imaging modality, many experts still question the clinical use and safety of CT coronary angiography, raising considerable debate in the medical community.

This issue of *Cardiology Clinics* includes a series of articles that provide a state-of-the-art summary of the current clinical applications of cardiac CT, reviews data that support the accuracy and the prognostic use of CT coronary angiography, and reports on the newest technologic advances and promising future applications of this exciting imaging modality.

Readers of *Cardiology Clinics* will enjoy this issue and will find the information and expert opinions very useful to their clinical practice.

Mario J. Garcia, MD, FACC
The Zena and Michael Wiener
Cardiovascular Institute
Mount Sinai Hospital and School of Medicine
One Gustave Levy Place
New York, NY 10029, USA

E-mail address:
Mario.garcia@mountsinai.org (M.J. Garcia)