President’s Message

As we begin 2011, we are certain to face continuing challenges in Nuclear Cardiology. The shifting landscape of global supply chain, regulatory and reimbursement changes is now joined by public concerns expressed over radiation safety.

It is important at this time of challenge to represent our modality with its unique strengths and the many great achievements over the last two decades. Myocardial perfusion imaging has become a mainstay in the management of ischemic coronary disease. Significant improvements in access, quality of care and credentialing have evolved out of necessity. Not surprisingly, considerable gains have been made against morbidity and mortality associated with cardiovascular disease.

The evolution of nuclear cardiac imaging now stands at the threshold of the great potential of Cardiovascular Molecular Imaging. The development of new tracers and imaging technology, potentially enabling faster, more accurate imaging with less radiation, has proceeded at a rapid pace in comparison to the last 10 years. These developments are critical to the ability of the modality to keep pace with advances in other technologies, new developments in cardiovascular research, and the changing needs of the public and broader cardiovascular medical community.

We are facing competition in many forms; Nuclear Cardiology should put more emphasis on its areas of strengths, including Molecular Imaging. Adherence to appropriate use criteria and practice guidelines is ever more important. Finally, increasing membership in professional societies is increasingly important for our profession. It gives our leadership a stronger voice, and the resources to represent us to an increasingly larger group of stakeholders, including the general public that we serve. By now you have made your choice to continue your affiliation with SNM and the Cardiovascular Council. We thank you for your support as we move forward into the challenges of 2011.

Mehran M. Sadeghi, MD
Cardiovascular Council President

Blumgart Award Profile: Rory Hachamovitch, MD, MSc

Statistics show that as many as 80% of new freshmen change their major during their first year of college. It isn’t often, then, when someone gets to accomplish in adulthood what they dreamed of as a child.

“I remember in kindergarten, we were asked to draw a picture of what we would be when we grew up. I drew a picture of a doctor with the traditional ‘little black bag’. I said ‘that’s what I would be when I grow up’. Even then, I thought it was a field where you could always be doing something good.” Those are the words of Rory Hachamovitch, MD, MSc.; 2010 Cardiovascular Council Blumgart Award Winner.
The son of an established physician in New York, Dr. Hachamovitch started his medical career with his M.D. at Albert Einstein Medical College in the Bronx in 1987. He went on to complete his medical residency at Cedars-Sinai Medical Center in Los Angeles and his Cardiovascular Disease fellowship at Beth Israel Hospital and Harvard Medical School in Boston. However, it was during his tenure as the Senior Research Fellow at Cedars-Sinai Medical Center in Los Angeles that he began to contribute in a dramatic way to the future of Nuclear Cardiology.

A series of important collaborative manuscripts beginning in 1995 addressed a number of emerging issues in relation to the role of myocardial perfusion imaging; incremental prognostic value, cost implications, gender-related treatment differences, and patients without known CAD, and translating results to pharmacologic stress were all addressed in original manuscripts. His 1998 publication in Circulation was the first to define a differential outcome of death versus MI from mildly abnormal MPI results (Circulation 1998; 97: 535-543). His work initiated the “less than 1% risk” mantra for a normal MPI scan that has stood the test of time in sub-sequent publications, including meta-analysis in the radionuclide imaging guidelines.

These studies only laid the groundwork for what he describes as his most important contributions to date. “As much as the earlier works may have meant at the time, our more recent studies are far more important”. Dr Hachamovitch specifically identifies these contributions as the concept that risk is contextual—the level of risk of any patient is a function of not only a test result, but also of the patient’s other characteristics. “We cannot realistically expect that any given size perfusion defect will be associated with the same level of risk in any patient. For example, if you report that on a particular study there is a defect representing 15% of the myocardium, is the level of risk the same if the patients is 40 years old as if they are 80? Do we really believe that it wouldn’t make a difference whether or not they have had prior revascularization or MI? Of course it does!” Dr Hachamovitch points out the important implications of this. “Any attempt to include estimates of risk as part of reporting requires us to consider all patient information, thus, we will need validated scores to permit physicians to this”. The other important contribution that Dr Hachamovitch identifies is the finding that myocardial perfusion imaging may be able to identify which patients will have enhanced survival with medical therapy as opposed to the use of revascularization. In a 2003 publication in Circulation, he along with a team of investigators from Cedars-Sinai Medical Center reported on a large series of patients who had undergone stress SPECT and were followed up for approximately 2 years. Those patients who had at least 10-15% of the myocardium ischemic had superior survival with revascularization compared to medical therapy, although is with little or no ischemia tended to have improved survival with medical therapy rather than revascularization. These findings were further confirmed in a series of publications from him and this group and have been confirmed by one publication from another group. If confirmed in future prospective randomized trials, Dr Hachamovitch said, these results could be the basis of what future patient treatment pathways will look like in the future as well as identifying solid ground upon which to justify our modality. Finally, he also points out that the preliminary findings from the SPARC trial may eventually become far more important contributions in any of his previous work.

Overall, he has contributed to over 150 Peer-reviewed reports, guidelines, editorials, reviews, and book chapters. His most recent work includes acting as co-Principal Investigator on the SPARC Trial (with former Blumgart Award winner Marcelo Di Carli), and an ongoing NIH “Challenge” Grant in Comparative Effectiveness research.
include increases in the frequency of risk factors for heart failure, like diabetes and obesity. Concerning is the fact that 20% or more heart failure victims will die in the first year after diagnosis, and the risk of sudden cardiac death is 6 to 9 times higher than it is for an individual without heart failure. The cost of heart failure to the healthcare system of the US alone is in excess of $39 billion annually.

The pathophysiology of heart failure is infinitely complex, with multiple co-existing factors; it can simultaneously be myocardial disease, an edematous disorder, an inflammatory syndrome and a neurohormonal disorder, all of which contributes to a progressively worsening hemodynamic disorder. These factors are not mutually exclusive, and all contribute in some degree to the onset and progression of the clinical syndrome.

While myocardial perfusion imaging has played a longstanding role in the evaluation of ischemic disease, new clinical studies have shed light on the clinical value of the technique specifically in patients with heart failure.

IMAGING-HF, published in 2009 by CV Council Board Member Prem Soman, MD, PhD, of the University of Pittsburgh, evaluated the performance characteristics of MPI as an early diagnostic strategy in patients hospitalized with their first episode of heart failure. The goals of this study included the determination of the distribution of LV ejection fraction, the prevalence and severity of myocardial ischemia in patients hospitalized with new-onset heart failure, and defining the role of early MPI in identifying patient in whom diagnostic coronary angiography might be avoided.

According to Dr. Soman, “The identification of extensive, etiologically-related coronary artery disease is a crucial step in management strategy of patients with new-onset heart failure and this prospective study indicates that MPI has a high negative predictive value for extensive coronary artery disease in this population”.

Also published in 2009 was a Nuclear Imaging sub-study of HF-ACTION (Heart Failure and A Controlled Trial Investigation Outcomes of Exercise Training), co-authored by CV Council Board Member Salvador Borges-Neto, MD, of the Duke University Medical Center. The main HF-ACTION trial was funded by grants from the NIH, for the purpose of testing the efficacy and safety of exercise training in patients with class II-IV heart failure and LV dysfunction (EF <35%). The Nuclear Imaging sub-study was designed to evaluate the relationships between exercise capacity, myocardial perfusion and function, and an emerging technique to evaluate ventricular dyssynchrony from gated SPECT images.

Dr. Borges-Neto stated “The simultaneous evaluation of perfusion, LV function and volumes provides an accurate way to distinguish between ischemic and non-ischemic heart failure etiologies. While the prognostic significance of MPI has been well established, the ability to assess ventricular dyssynchrony adds a new dimension.” Of the 240 patients selected for the nuclear ancillary study enrollment, nearly all had evaluation of resting perfusion and LVEF, and 174 were evaluated for ventricular synchrony after excluding 37 patients who had bi-ventricular pacemakers.

Noninvasive methods to assess mechanical ventricular dyssynchrony have traditionally involved echocardiographic parameters derived from M-mode and tissue Doppler imaging. However, echocardiography has not been shown to improve patient selection for Cardiac Resynchronization Therapy, or CRT. CRT is FDA approved for use in patients with Class III or IV heart failure, LVEF <35% and a wide QRS complex of >120 milliseconds.

The authors concluded that gated SPECT contributed to the quantitative measures of perfusion, function and dyssynchrony, and that novel measure of dyssynchrony appears to help discriminate ischemic form non-ischemic patients.

“Heart failure is a complex mix of reduced cardiac output, peripheral hemodynamics and deranged muscle function and metabolism. These data begin to allow us to evaluate the relationships between these mechanical and physiologic factors with a well established test” added Dr. Borges-Neto.

For more information about these studies, or to contact the authors, please write to the Cardiovascular Council at CVC@snm.org.

Mid-Winter Meeting: Hot Topics in Nuclear Cardiology

The Cardiovascular Council is sponsored a session at the MWM entitled “Hot Topics in Nuclear Cardiology” from 6-9 PM Saturday, January 22nd. This session provided interactive, case-based teaching on four major areas of opportunity in the field: Assessment of risks and benefits of radionuclide perfusion and function imaging, review of faster imaging and processing techniques to reduce radiation exposure; updates on quantification of absolute myocardial blood flow with cardiac PET; and Ischemic based risk stratification in CAD management.

On Sunday morning, the CV Council-sponsored session on Molecular Vascular Imaging in clinical practice explored promising areas of development in the field, including intravascular imaging of atherosclerotic plaque using radionuclide targets, and intracoronary imaging with intravascular ultrasound and optical coherence tomography. Identifying vascular plaque inflammation with FDG was reviewed, CT characterization of atherosclerosis and new, emerging tracers for characterizing arterial plaque (that may replace FDG) were discussed.

Both sessions were organized by Ron Schwartz, MD, and CV Council President Mehran Sadeghi, MD. If you did not attend the MWM and would like more information about these sessions, contact...
the Cardiovascular Council at CVC@snm.org.

**Member Survey: Results**

The Cardiovascular Council, in an effort to evaluate the role of the Council to its members, initiated an internet survey between January 6-20, 2010. Questions included length of membership with CV Council, other organizations joined, and the relative value of the newsletter and other services the Council provides.

The Council also offered a complimentary registration to the 2010 Annual Meeting in a random drawing of survey participants. We are pleased to congratulate Toya Powell, CNMT, from Memphis, TN; who attended SNM in Salt Lake City compliments of the CV Council.

Overall, the Newsletter service and the Cardiovascular Symposia and Categorical Sessions organized by the Council were considered to be of good or great value to the membership. The survey provided the CV Council with a number of pertinent topics for upcoming sessions, including those conducted at the Mid-Winter meeting.

“The rationale for the survey was to reach out to the membership to understand what more we can do to enhance our communications,” said CVC President Mehran Sadeghi, MD. “Our membership is strong within SNM, and we would like to continue to build on that. We were pleased to see that over half of our members have been with us for over 5 years. We will continue these kinds of outreach activities to stay in touch with our members.”

To see other survey responses as charts in PDF, click here.

**Cardiovascular Clinical Resource Center**

The CV Council has added a new area to the Web site, based on member feedback, to make available a quick link to some of the publicly available tools that may be helpful to you in your clinical practice. Links include updates to guidance documents in cardiovascular disease, resources for laboratory accreditation, and coding advice through SNM’s “Coding Corner” feature. Updates will occur periodically; and you can check it out here:

http://interactive.snm.org/index.cfm?PageID=1396

![How Long Have You Been a Member of CVC?](image)