

Spring 2018

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President's Message



Dear Colleagues,

The year has flown by very quickly. Thanks to the CVC Board of Directors and Program Committee, we had a successful Mid-Winter meeting and are anticipating our upcoming Annual Meeting in a month. We have planned many exciting sessions, with greater emphasis on case-based presentations, multi-modality imaging, audience participation, and take-home points. We are also collaborating with several other councils to bring more cardiovascular content to the meeting at large. New this year, we have joint sessions with the American Society of Nuclear Cardiology and the European Association of Nuclear Medicine to bring you different perspectives and discuss future collaborations. I also wish to congratulate Dr. Thomas Schindler for receiving the Blumgart Award. We look forward to his lecture titled "Cardiac PET In-Vivo Assessment of Cardiovascular Disease – Why Does it Matter!" on Sunday, June 24 at

3 pm. I hope to see you all there.

A new networking event called "Drink and Think", in which the CV Council Board Members will participate, is also being introduced. Times and locations will be announced soon.

I also wish to congratulate Dr. Venk Murthy and Dr. Marcelo Di Carli and the team for the successful publication of the joint SNMMI/ASNC publication, Clinical Quantification of Myocardial Blood Flow Using PET, a very timely and important document, given recent release of the new Category III code for PET myocardial blood flow quantification by CMS for 2018. We are working on several other documents as part of the Value Initiative this year and will update you as the documents are nearing completion.

I would also like to congratulate our interns on their successes this year. We look forward to their participation at the Annual Meeting. With the recent shortage of aminophylline, we are including a short discussion and references on the use of caffeine for reversal of regadenoson side effects. Dr. John Bois of the Mayo Clinic, Rochester, MN, wrote this review, and we thank him for his efforts on behalf of the CVC membership.

I look forward to seeing you all in Philadelphia!

Sincerely,



Panithaya Chareonthitawee, MD
Cardiovascular Council President

The CVC at the 2018 Annual Meeting

The CVC sponsored sessions are among the most advanced and well attended of the Annual Meeting. All sessions feature the leading experts and the latest data in both established and expanding applications in Cardiovascular Molecular Imaging. The CV Council has planned the following Categorical and CE sessions at the 2018 Annual Meeting in Philadelphia, PA.

CVC Categorical Session, Saturday June 23:

- [Case-Based Review of Advanced Cardiovascular Imaging \(CAT5\)](#)
 - *New for 2018: The focus of the CV Categorical will feature shorter sessions in a practical case-based approach, covering coronary artery disease, heart failure, inflammation and infection across multiple modalities*

CVC Continuing Education Sessions:

- June 23: [Cardiovascular Boot Camp I \(CE07\)](#)
- June 23: [Cardiovascular Young Investigator Award Symposium \(SS05\)](#)
- June 24: [Cardiovascular Boot Camp II \(CE21\)](#)
- June 24: [Blumgart Award Lecture: FDG PET Assessment of Viability and Inflammation \(CE28\)](#)
- June 25: [Cardiovascular Molecular Imaging \(CE42\)](#)
- June 25: [How to Establish a Cardiac PET Program \(CE49\)](#)
- June 26: [Cardiovascular Imaging with Novel Radiotracers: Looking Beyond Perfusion \(CE70\)](#)
- June 26: [Measurement of Absolute Myocardial Blood Flow Part 1 \(CE77\)](#)
- June 26: [Measurement of Absolute Myocardial Blood Flow Part 2 \(CE84\)](#)

Other Sessions of Interest in Cardiovascular Imaging:

- June 23: [Basics of Cardiac PET/CT \(CE12; Correlative Imaging Council\)](#)
- June 24: [Cardiac PET/CT Workshop \(CE19; Correlative Imaging Council\)](#)
- June 24: [MPI Stress Testing \(TS06\)](#)
- June 24: [Atherosclerosis to HF: Nuclear Imaging and AI \(CE32; Chinese Society of NM\)](#)
- June 26: [Opportunities for Collaboration: SNMMI and ASNC \(CE89\)](#)
 - *New for 2018: This innovative joint session will provide updates in the areas of joint publications, training initiatives, advocacy and Capitol Hill activities underway between these sister societies*

Also new for 2018, SNMMI has announced a networking event called “Drink and Think”, in which the CV Council Board Members will participate. Times and locations will be announced soon; plan to take advantage of an opportunity to mingle and discuss important aspects of cardiovascular radionuclide imaging with the experts in the Society.

The SNMMI offers an interactive function on the [Annual Meeting Website](#) to build your own agenda for each day. Register now and don't miss any of these high quality sessions with the leaders of the field!

2017-2019 CVC Intern Updates

The 2017-2019 CVC Interns are Stephanie Thorn, PhD and Richard L. Weinberg, MD, PhD.



Since her selection to the CV Council in June of 2017, Dr. Thorn has been promoted to Research Scientist at Yale University, in the Yale Translational Research Imaging Center (YTRIC).

Most recently, she presented research abstracts at the American Heart Association and American College of Cardiology congresses on novel therapies and molecular imaging approaches post-MI. She contributed a poster presentation and an additional lecture at the ACC Congress on Molecular Imaging in Heart Failure as part of the 'Molecular Imaging: Bench to Bedside' session, alongside a very seasoned faculty.

Dr. Thorn received an award in 2017 from the ENTELLIGENCE™ Young Investigator program in the US; as part of this grant funding she has developed a porcine model of right ventricle heart failure and novel imaging approaches for the assessment of the right ventricle. The RV model has been accepted for presentation in September at the Rapid Fire session of the American Society of Nuclear Cardiology's Annual Meeting.

She has also earned industry sponsor funding to develop and execute a protocol to compare ^{201}Tl dynamic SPECT MBF quantification with ^{82}Rb PET MBF quantification in three different patient populations. She is currently a co-author of 3 publications in print during the last year, with additional manuscripts in preparation.

She will be lecturing at the SNMMI Annual meeting on “Patient Preparation Protocols for Myocardial Viability and Cardiac Sarcoidosis”, as part of the Blumgart Award Session (204C) on Sunday, June 24th at 3:00 PM.



Dr. Weinberg is a Clinical Lecturer in the Division of Cardiovascular Medicine at the University of Michigan. He joined the faculty at the University of Michigan in August 2015, after completing his MD, Internal Medicine residency, Cardiology Fellowship, and Nuclear Cardiology training at Columbia University. He also holds a PhD in chemistry from the University of Cambridge. Dr. Weinberg is a consultative cardiologist with clinical and research interests in nuclear cardiology. In 2018, he was named Associate Program Director of the Cardiovascular Disease Fellowship Program at the University of Michigan.

In 2017, he was a co-author of the ASNC Standardized Reporting Guidelines published in the *Journal of Nuclear Cardiology*. The report updates the 2009 guidance, and represents a broader perspective on nuclear cardiology as well as significant changes to the scope of structured reporting.

His current research focuses on the application of cardiac PET imaging to better characterize myocardial inflammation and infection. Most recently he reported on the relationship between biomarkers of fatty acid uptake and glucose metabolism to determine normal values of myocardial F-18 FDG uptake in patients undergoing F-18 FDG scans to evaluate for cardiac inflammation and infection. The results may help to evaluate the adequacy of metabolic preparation for these important tests.

At the Annual Meeting in Philadelphia, he will be providing two important practical lectures on Saturday. The first is at the CV Council Categorical on 'Functional Versus Anatomic Imaging for Chest Pain', which includes pertinent cases for discussion. On Saturday afternoon he will present 'ECG Interpretation and Stress Testing Emergencies', while co-moderating the session entitled Cardiovascular Boot Camp 1.

The SNMMI Internship Program was established in 2008 with the aim, "To identify and train future leaders of SNMMI in the structure, governance, and operations of the organization, to prepare individuals for progressive levels of responsibility, and to ensure effective leadership that advances the mission and goals of the organization".

Please join the Cardiovascular Council in congratulating these two young professionals for their outstanding achievements, and plan to attend their sessions and support the important work they are doing on behalf of the SNMMI membership.

New in the Literature: Joint Position Statement on Myocardial Blood Flow

Members of the CV Council have successfully completed the execution and publication of a new joint position statement entitled "Clinical Quantification of Myocardial Blood Flow Using PET: Joint Position Paper of the SNMMI Cardiovascular Council and the ASNC (American Society of Nuclear Cardiology)". Board Member Dr. Venkatesh Murthy of the University of Michigan spearheaded the effort between both Societies and the expert panel of contributors and reviewers. Former CV Council President Dr. Marcelo DiCarli was co-chair of the effort.

Dr. Murthy states, "This scientific statement represents the culmination of approximately two years of hard work by a writing committee of leading experts, and summarizes several decades of scientific study."

This new document, published simultaneously in the *Journal of Nuclear Medicine* and the *Journal of Nuclear Cardiology*, is intended to consolidate the technical considerations for quantification of Myocardial Blood Flow (MBF) by PET, and to summarize and update the scientific rationale for its use.

Radionuclide imaging for ischemic disease by conventional SPECT and PET have become an important non-invasive part of cardiovascular disease management. However, these conventional approaches have been limited by a

fundamental drawback, in that the assessment of 'relative' myocardial perfusion has been proven to underestimate severe, 'balanced' multi-vessel disease. In addition, the commonly used Tc-99m tracers are not highly extracted, which can lead to clinical differences in detection of ischemia and the extent by quantification.

Quantitative PET can address these limitations, with its ability to quantify global and regional MBF (in perfused tissue), assess regional perfusion abnormalities with relative MPI, and assess contractile function abnormalities and chamber dimensions with gated imaging.

Those who are performing, or even considering cardiac PET imaging in clinical practice will find it a comprehensive review that covers all aspects of the clinical applications:

- Technical considerations; tracers and protocols
- Scanner performance, acquisition and image analysis
- Preferred nomenclature and physiologic reference ranges
- Treatment guidance
- Diagnostic and prognostic implications
- Special population considerations
- Guidance on interpretation and reporting
- Perspective on Coronary CTA and Fractional Flow Reserve (FFR)

Dr. Murthy adds, "We believe that quantification of myocardial blood flow is an important new frontier for clinical translation of cardiac PET and this document provides a scientific road map for the journey."

The Joint Position Statement was published online on December 14th, 2017 as DOI: 10.2967/jnumed.117.201368, and in print as THE JOURNAL OF NUCLEAR MEDICINE • Vol. 59 • No. 2 • February 2018.

New in the Literature: Alternatives to Aminophylline Reversal

Addressing the Aminophylline Shortage

The potential untenable state of the current aminophylline supply has led to the search for alternative methods by which to relieve regadenoson-induced side effects. Caffeine has been proposed as a safe, effective, inexpensive (\$5.64 for 3-mL vial of 60 mg IV caffeine citrate vs. \$9.81 for a 10-mL vial of 250 mg IV aminophylline¹) and readily available substitute for aminophylline. It is a competitive inhibitor of the A2a receptor that can be rapidly absorbed via the gastrointestinal tract during the fasting state or administered intravenously. A recently conducted randomized trial compared IV aminophylline (100 mg administered over 30-60 seconds) versus IV caffeine citrate (60 mg infused over 3-5 minutes) and oral caffeine administered as coffee or diet cola (no specific dose prescribed²). Oral caffeine did demonstrate efficacy in reversing regadenoson-induced side effects but was inferior to both IV aminophylline and IV caffeine in achieving complete or near complete reversal. Furthermore, 37% of patients randomized to oral caffeine crossed over to the IV caffeine arm due to persistent symptoms. IV caffeine was comparable to aminophylline both in terms of reversing adverse effects of regadenoson and in the time required to achieve this reversal. Of note, this trial did not contain a placebo group nor did it include a standardized intake of oral caffeine.

Given the recent shortages of aminophylline, nuclear cardiology stress laboratories need to prepare alternative strategies to address regadenoson-induced side effects. Given the initial promising results of caffeine, one potential approach to reducing adverse effects after regadenoson administration is as follows:

- 1) If the patient is able consider a “walking” regadenoson stress test as this strategy has been demonstrated to lessen regadenoson related side effects.
- 2) If symptoms are mild and if the patient is able to imbibe fluid (i.e. does not have nausea) consider oral caffeine in the form of coffee or soda.
- 3) If symptoms are severe or milder symptoms have not been alleviated by oral caffeine then administered 60 mg IV caffeine citrate over 3-5 minutes.
- 4) As with aminophylline, if possible avoid administration of a reversal agent within two minutes following regadenoson administration as this may compromise test sensitivity for myocardial ischemia.

References

1. Jolly AF, Thomas GS. Intravenous caffeine: An alternative to aminophylline to reverse adverse effects during regadenoson myocardial perfusion imaging. J Nucl Cardiol 2017;24:1071-1074.
2. Doran JA, Sajjad W, Schneider MD, Gupta R, Mackin ML, Schwartz RG. Aminophylline and caffeine for reversal of adverse symptoms associated with regadenoson SPECT MPI. J Nucl Cardiol 2017;24:1062-1070.

Upcoming Cardiovascular Meetings in 2018

European Society of Cardiology

August 25-29

Munich, Germany

www.escardio.org/Congresses-&-Events/ESC-Congress

American Society of Nuclear Cardiology, 23rd Annual Scientific Session

September 6-9

San Francisco, CA

www.asnc.org/asnc2018

European Association of Nuclear Medicine, 31st Annual Congress

October 13-17

Dusseldorf, Germany

www.eanm18.eanm.org

Japanese Society of Nuclear Medicine 58th Annual Meeting

November 15-17

Okinawa, Japan

www.c-linkage.co.jp/jsnm-jsnmt2018/en/index.html

American Heart Association Scientific Sessions

November 10-12

Chicago, IL

http://professional.heart.org/professional/EducationMeetings/MeetingsLiveCME/ScientificSessions/UCM_316900_Scientific-Sessions.jsp

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[Make Your Plans to Attend!](#)

The 2018 Annual Meeting
Philadelphia, PA
June 23-27

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Your membership is critical to the ability of the CVC to continue providing the highest caliber educational programs!

The Cardiovascular Council is on Twitter!
Follow us at [@CVC_SNMMI](#) for more news and updates as they happen!