DCBLD2-deficient mice can be detected by ^{18}F-NaF-based molecular imaging. In addition, ^{18}F-NaF autoradiography appears more sensitive than Alizarin red staining for detection of microcalcification. The model developed in this study is likely to be of value in developing novel therapeutic and imaging agents for calcific aortic valve disease.

Glasenapp et al. from the Hannover Medical School and the Technische Universität Munich (both in Germany) reported on "Multimodal imaging identifies cardiac chemokine receptor type 4 (CXCR4) upregulation in response to pressure overload as a predictor of subsequent heart failure progression" [34] in a mouse model. In this study, ^{68}Ga-pentixafor imaging effectively identified mild diffuse inflammatory cell infiltration in pressure overloaded myocardium in a way that was predictive of subsequent functional decline and responsive to unloading, indicating a relationship between pressure overload and inflammation. The authors concluded that "molecular imaging of CXCR4 may guide novel inflammation-targeted therapies to prevent adverse remodeling and improve functional outcomes in heart failure."

Wang's group from the First Hospital of Shanxi Medical University (Taiyuan) and the Third Affiliate Hospital of Soochow University (Changzhou) (both in China) described "Evaluation of myocardial blood flow and coronary flow reserve with ^{13}N–NH_3 PET MPI in patients with different degrees of obstructive sleep apnea" [163]. They showed that myocardial blood flow and flow reserve are significantly decreased in patients with obstructive sleep apnea. Coronary microvascular function, an early sign of atherosclerosis, can be evaluated noninvasively with PET in these patients and the results could serve as a predictor of cardiovascular risk.

Liu et al. from Peking Union Medical College Hospital and the Chinese Academy of Medical Sciences/School of Medicine (both in Beijing, China) reported on "Accumulation of endothelial progenitor cells in lung of pulmonary arterial hypertension: ^{89}Zr-oxine cell labeling with PET imaging in a rat model" [37]. They showed that these cells actively accumulate in the lungs of these animals and that ^{89}Zr-oxine can be used to delineate endothelial progenitor cells in the lung in pulmonary arterial hypertension with PET imaging and may provide a noninvasive endothelial progenitor cell monitoring tool.

Summary

The abstracts presented here are in many ways a snapshot of the state of the art in nuclear and molecular imaging and serve to highlight its value in cardiovascular medicine. It is worth restating that MPI remains the mainstay of nuclear cardiology practice; however, emerging alternative imaging techniques can potentially narrow the role of MPI in CAD management. At the same time, molecular imaging of infiltrative cardiomyopathy, now fully integrated in clinical practice, is a major area of growth for our field. And, as we have seen at this meeting, a number of new applications of molecular imaging are in the pipeline and may expand the utilization and value of nuclear and molecular imaging in cardiology.

Grants, Awards, Scholarships Now Open for Application

On October 18 SNMMI announced a range of 2020 grants, awards, and scholarships open for applications from SNMMI and SNMMI-TS members. Several of these were due before the publication of this issue of Newsline, but the remaining due dates include:

- 2020 Mitzi & William Blahd, MD, Pilot Research Grant, $25,000. January 6, 2020.
- 2020 ERF SNMMI CMIIT Lab Professional Award, $1,000 travel stipend. January 13, 2020.
- 2020–2022 Wagner–Torizuka Fellowship, $48,000 stipend. January 30, 2020.
- 2020 Bradley–Alavi Student Fellowships, $3,000. February 3, 2020.
- 2020 Robert E. Henkin, MD, Government Relations Fellowship, $1,000 + travel. February 10, 2020.
- 2020 Medical/Science Student Research Grant: Discovering Molecular Imaging (new), $5,000. February 1, 2020.
- 2020 Marc Tetalman, MD, Memorial Award, $5,000. March 31, 2020.
- 2020 Ursula Mary-Kocemba Slosky, PhD, Professional Relations Fellowship, $1,000 + travel. April 7, 2020.
- 2020 Hyman-Ghesani SNMMI Global Health Scholarship (more information available on the SNMMI website listed below).

Also available are awards targeted at nuclear medicine technologists:

- 2020 ERF SNMMI-TS Advanced Degree Scholarship, $5,000. January 15, 2020.
- 2020 ERF SNMMI-TS Bachelor's or Master's Degree Completion Scholarship, $4,000. January 27, 2020.
- 2020 Paul Cole Student Technologist Scholarship, $1,000. February 17, 2020.
- 2020 Susan C. Weiss Clinical Advancement Scholarship, $1,000. March 2, 2020.

A complete list of grants, fellowships, and scholarships, each linked to details, is available at: https://www.snmmi.org/NewsPublications/NewsDetail.aspx?ItemNumber=32733.