



Results from Lantheus Medical Imaging's First Phase 3 Study of Novel PET Cardiac Imaging Agent Flurpiridaz F 18 Presented at ICNC12

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Data Show Statistically and Clinically Significant Improvements Observed in Populations of Special Clinical Interest, including Women and Obese Subjects; Subjects Exposed to Approximately 50 Percent Less Radiation than SPECT MPI Studies

N. BILLERICA, Mass. (May 4, 2015) – [Lantheus Medical Imaging, Inc.](#), a global leader in developing, manufacturing, selling and distributing innovative diagnostic imaging agents and products, today announced that results from its first Phase 3 study of flurpiridaz F 18 for myocardial perfusion imaging (MPI) were presented at the International Conference on Nuclear Cardiology and Cardiac CT (ICNC12) in Madrid, Spain. The oral presentation, "Flurpiridaz F 18 MPI: Recent clinical trial data," was made by Jamshid Maddahi, M.D., Professor of Medicine (Cardiology) and Molecular & Medical Pharmacology (Nuclear Medicine), David Geffen School of Medicine at UCLA, in the "Important Clinical Trials and Registries in Nuclear Cardiology" session of ICNC12.

"Analysis of the first Phase 3 clinical study has confirmed the value of this novel agent as compared with standard SPECT imaging for the diagnosis of coronary artery disease," said Dr. Maddahi, the Principal Investigator of the study. "The results of this study provide additional evidence for flurpiridaz F 18 as a very important potential new agent for the diagnosis and characterization of coronary artery disease."

The Phase 3 results for flurpiridaz F 18 are from a multicenter, international study enrolling 795 subjects with known or suspected coronary artery disease (CAD) and scheduled for coronary angiography and single photon emission computed tomography (SPECT) imaging. Flurpiridaz F 18 is an investigational positron emission tomography (PET) MPI agent in late stage clinical development.

In the first Phase 3 study, subjects underwent flurpiridaz F 18 PET MPI and SPECT MPI studies, with coronary angiography used as the truth standard for each. The currently available PET MPI agents do not generally allow sufficient time for exercise stress testing and are thus limited to pharmacological stress testing. With a 110 minute half life, flurpiridaz F 18 can be easily used in association with treadmill exercise stress testing, which in itself can give a clinician valuable observational data about a patient's condition to complement the imaging results.

The Phase 3 study showed that in a well-controlled setting, flurpiridaz F 18 imaging consistently performed in a balanced manner in identifying disease (sensitivity) and ruling out disease (specificity) when compared to coronary angiography. Unlike flurpiridaz F 18, SPECT imaging results were skewed with low sensitivity and high specificity. The Phase 3 study's two pre-specified primary endpoints required a comparison of the balanced flurpiridaz F 18 sensitivity and specificity results and the skewed SPECT sensitivity and specificity results. In this comparison, flurpiridaz F 18 far exceeded SPECT for sensitivity but did not meet the non-inferiority threshold for specificity, implying a substantial and unexpected under-diagnosis of CAD with SPECT imaging in the trial.

The Phase 3 study also compared diagnostic accuracy of flurpiridaz F 18 versus SPECT imaging, showing statistical significance in the overall population and in those populations of special clinical interest, including women and obese subjects (Body Mass Index of 30 or greater). Superiority over SPECT was further demonstrated by comparing the area under the receiver operator curve (ROC) for CAD diagnosis. Superiority over SPECT for diagnostic accuracy in the area under the ROC curves was particularly pronounced in women, obese subjects and subjects with multivessel disease.

Importantly, radiation exposure associated with flurpiridaz F 18 imaging was reduced to approximately 50% of that associated with SPECT MPI. Even with reduced radiation, a significantly higher percentage of images were rated as either excellent or good quality with flurpiridaz F 18 imaging, compared to SPECT imaging for stress images and rest images, leading to greater diagnostic certainty of interpretation — namely, the percentage of cases with definitely abnormal or definitely normal interpretation. No drug-related serious adverse events were observed.

"We are very pleased with the results of the first Phase 3 study of flurpiridaz F 18 presented at ICNC," said Cesare Orlandi, M.D., Chief Medical Officer of Lantheus Medical Imaging. "The risk-benefit profile of this agent appears to be particularly favorable in populations underserved by currently available diagnostic approaches, filling a critical gap in the diagnostic continuum and creating an opportunity for substantial improvements in downstream clinical decision-making. We see great promise in flurpiridaz F 18 as an innovative PET imaging tool for the diagnosis and characterization of coronary artery disease."

Based on the results of the first Phase 3 study, Lantheus redesigned the protocol for its second Phase 3 study, including different primary endpoints — namely, the performance of flurpiridaz F 18 on its own merit versus coronary angiography as the truth standard. The U.S. Food and Drug Administration has granted a Special Protocol Assessment in connection with the new second Phase 3 study, and Lantheus is in active discussions with prospective partners for the further development and commercialization of this promising candidate.

About Flurpiridaz F 18 Injection and Coronary Artery Disease

Flurpiridaz F 18 injection, a fluorine 18-labeled agent that binds to mitochondrial complex 1 (MC-1)¹, was designed to be a novel myocardial perfusion PET imaging agent that may better evaluate patients with known or suspected CAD, which is the most common form of heart disease², affecting an estimated 15.4 million Americans 20 years of age or older³. CAD is the leading cause of death in the United States for both men and women². Each year more than 400,000 Americans die from CAD². The flurpiridaz F 18 Phase 2 study results were published in the *Journal of the American College of Cardiology (JACC)* on January 29, 2013⁴.

About PET and MPI

Positron emission tomography, also called PET imaging or a PET scan, is a type of nuclear medicine imaging procedure⁵ that provides information about the function and metabolism of the body's organs, unlike computed tomography (CT) or magnetic resonance imaging (MRI), which primarily show anatomy and structure⁶. MPI is a non-invasive test that utilizes a small amount of radioactive material (radiopharmaceutical) injected into the body to depict the distribution of blood flow to the heart. MPI is used to identify areas of reduced blood flow (perfusion) to the heart muscle. The test is typically conducted under both rest and stress conditions, after which physicians examine and compare the two scans and predict whether the patient has significant coronary artery disease⁷. Although SPECT is most commonly used for MPI⁸, PET imaging has gained considerable support and use in the field of cardiovascular imaging, as it offers many advantages to SPECT, including higher spatial and contrast resolution, which results in higher image quality and improved diagnostic accuracy, accurate attenuation correction and risk stratification⁹.

About Lantheus Medical Imaging, Inc.

Lantheus Medical Imaging, Inc. is a global leader in developing, manufacturing, selling and distributing innovative diagnostic imaging agents and products. The Company provides a broad portfolio of products, which are primarily used for the diagnosis of cardiovascular diseases. Lantheus' key products include the echocardiography contrast agent DEFINITY® Vial for (Perflutren Lipid Microsphere) Injectable Suspension; TechnoLite® (Technetium Tc99m Generator), a technetium-based generator that provides the essential medical isotope used in nuclear medicine procedures; and Xenon Xe 133 Gas (Xenon 133), an inhaled radiopharmaceutical imaging agent used to evaluate pulmonary function and for imaging the lungs.

Lantheus has more than 500 employees worldwide with headquarters in North Billerica, Massachusetts, and offices in Puerto Rico, Canada and Australia. For more information, visit www.lantheus.com.

Safe Harbor for Forward-Looking and Cautionary Statements

This press release contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995, as in effect from time to time. Such forward-looking statements are subject to risks and uncertainties that may be described from time to time in our filings with the Securities and Exchange Commission. Readers are cautioned not to place undue reliance on the forward-looking statements contained herein, which speak only as of the date hereof. The Company undertakes no obligation to publicly update any forward-looking statement, whether as a result of new information, future developments or otherwise, except as may be required by law.

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¹ Yalamanchili, P, Wexler, E, Hayes, M, Yu, M, MD, Bozek J, Radeke, H, Azure, M, Purohit, A, Casebier, DS, and Robinson, SP. Mechanism of uptake and retention of 18F BMS-747158-02 in cardiomyocytes: A novel PET myocardial imaging agent. *Journal Nuclear Cardiology* 2007 Nov-Dec;14(6):782-8.

² National Institutes of Health, National Heart, Lung, and Blood Institute. Coronary Artery Disease: Who Is At Risk. http://www.nhlbi.nih.gov/health/dci/Diseases/Cad/CAD_WhosAtRisk.html. Accessed May 2015.

³ Heart Disease and Stroke Statistics. 2014 Update: A Report From the American Heart Association. *Circulation*. 2014;129:e28-e292.

⁴ Berman, D.S., Maddahi, J., *et al*. Phase II Safety and Clinical Comparison with Single-Photon Emission Computed Tomography Myocardial Perfusion Imaging for Detection of Coronary Artery Disease: Flurpiridaz F 18 Positron Emission Tomography. *J AM Coll Cardiol*. 2013 Jan; 61(4):469-77.

⁵ Radiology Info. What is Positron Emission Tomography – Computed Tomography (PET/CT) Scanning. <http://www.radiologyinfo.org/en/info.cfm?pg=PET>. Accessed May 2015.

⁶ National Institutes of Health. NIH Clinical Center. Positron Emission Tomography Department Overview. <http://clinicalcenter.nih.gov/pet/>. Accessed May 2015.

⁷ Society of Nuclear Medicine. Procedure Guidelines for Myocardial Perfusion Imaging. Version 3.0 June 2002. http://interactive.snm.org/docs/pg_ch02_0403.pdf.

⁸ Salerno, M and Beller, GA, Noninvasive Assessment of Myocardial Perfusion. *Circ Cardiovasc Imaging*. 2009; 2:412-424.

⁹ Heller, G, Calnon, D and Dorbala, S. Recent Advances in Cardiac PET and PET/CT Myocardial Perfusion Imaging. *J Nucl Cardiol* 2009; 16:962-9.