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Study Reveals Potential New Therapeutic Target for Patients with Atherosclerosis

Portland, OR: Researchers have announced the results of a study which used contrast ultrasound molecular imaging (CMI) to examine a relatively new role for platelets at early to mid stages of atherosclerosis. Atherosclerosis, or hardening of the arteries due to plaque build-up, can lead to many serious health problems, including stroke and coronary heart disease, which is the number one killer of both men and women in the United States.

“It is well known that platelets, which are a constituent of blood clots, play a role in forming large clots that occlude arteries in stroke and heart attack. Our study opens up a whole new perspective on how platelets play a role in provoking the earlier initiation and growth of atherosclerotic plaques,” said Primary Investigator Chi Young Shim, MD, PhD. Dr. Shim is a Postdoctoral Researcher at Oregon Health & Science University in Portland, OR; she and her colleagues used molecular imaging with “smart” targeted microbubbles to detect the sticking of platelets to the vessel wall at various stages of atherosclerosis.

Dr. Jonathan Lindner, the senior investigator of the study adds, “It has been suspected that platelet adhesion to the inner lining of blood vessels, even temporarily, can result in the deposition of harmful chemicals that can promote plaque growth and instability from the platelet to the vessel wall. This study is the first to definitively show that this process happens in the early stage of the disease. We also used smart microbubbles to evaluate the mechanism that causes them to stick, which involves the oxidative stress and the abnormal growth of sticky molecules (Von Willebrand factor) on the plaque surface. These results are important because they now give us a possible therapeutic target for new very potent anti-oxidant therapy.”

Researchers on the study, *Platelet Attachment to Vascular Endothelium Occurs in Both Early and Late-Stage Atherosclerosis Secondary to Dysregulation of Von Willebrand Factor: Evaluation by Contrast Ultrasound Molecular Imaging*, included Chi Young Shim, Ya Ni Liu, Tami Atkinson, Mackenzie Treible, Aris Xie, Yue Qi, Ted Foster, Todd Belcik and Jonathan R. Lindner from Oregon Health & Science University in Portland, OR; Zaverio Ruggeri from Scripps Research Institute in La Jolla, CA; and Jose Lopez from University of Washington in Portland, OR.



A poster based on the results of the study will be displayed in the Poster and Exhibit Hall from Saturday, June 21 through Monday, June 23 at the American Society of Echocardiography (ASE) 25th Annual Scientific Sessions at the Oregon Convention Center, Portland, OR. Dr. Shim will present this research during the prestigious 2014 Arthur E. Weyman Young Investigator's Award Competition on Monday, June 23, from 8:00 am – 9:30 am in the Portland Ballroom, where the four best abstracts submitted compete in front of a panel of luminaries for cash prizes and international recognition.

To schedule an interview with Dr. Shim, please contact [Andie Piddington](#) by Friday, June 20. For on-site media inquiries please go to the Registration Desk or contact [Robin Wiegerink](#).

As the largest global organization for cardiovascular ultrasound imaging, the American Society of Echocardiography (ASE) is the leader and advocate, setting practice standards and guidelines. Comprised of over 16,000 physicians, sonographers, nurses, and scientists, ASE is a strong voice providing guidance, expertise, and education to its members with a commitment to improving the practice of ultrasound and imaging of the heart and cardiovascular system for better patient outcomes. For more information about ASE and the 2014 Scientific Sessions, visit www.asecho.org.

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