



Shockwave Announces Collaboration with Abiomed on Physician Training

December 11, 2018

Abiomed Invests \$15 Million in Shockwave

Santa Clara, Calif. – December 11, 2018 – Shockwave Medical, a pioneer in the development and commercialization of intravascular lithotripsy to treat complex calcified cardiovascular disease, today announced an investment and collaboration agreement with Abiomed, Inc. As outlined by the agreement, Abiomed will invest \$15 million in Shockwave and the two companies will collaborate on a training and education program in the United States and Germany focused on the benefits of complementary use of their respective technologies.

Shockwave's intravascular lithotripsy (IVL) technology employs sonic pressure waves to safely crack vascular calcium within the vessel wall, which enables arteries to expand under low pressure and become more compliant. Shockwave markets its Shockwave M⁵ Peripheral Intravascular Lithotripsy Catheter in the United States and Europe. With increasing frequency, the Shockwave M⁵ catheter is being used in patients with heavily calcified Iliac arteries in order to facilitate the transfemoral delivery of sophisticated devices with catheters, including transcatheter heart valves (TAVR) and Abiomed's Impella[®]. IVL enables this patient group to benefit from these life-saving therapies when they would otherwise be ineligible for the procedure or would be at increased risk for procedural complications. In Europe, Shockwave also markets its coronary catheter – Shockwave C² – which is used to treat severely calcified de novo coronary artery disease.

"While we are still early in our commercial scaling both in the US and Europe, I am pleased with how positively our Shockwave technology has been received and how many different types of patients and vessels our customers are able to safely treat with our IVL system," said Doug Godshall, President and CEO of Shockwave Medical. "We are delighted to be able offer patients our solution in combination with Abiomed's Impella technology using a minimally invasive approach, which should meaningfully improve outcomes. With Abiomed's best-in-class approach to training and education, Shockwave will be able to more efficiently increase awareness and introduce IVL to customers, which we believe will help them better treat their most challenging patients. We are encouraged to see the positive clinical response we have witnessed to date."

About Shockwave Medical's Intravascular Lithotripsy System

Shockwave Medical's IVL System leverages similar principles to urologic lithotripsy, which has been used as a safe and effective treatment to break up kidney stones for several decades. The generator produces energy that travels through the connector cable and catheter to an array of miniaturized lithotripsy emitters located near the calcified lesion. With the integrated balloon expanded to ultra-low pressure, a small electrical discharge at the emitters vaporizes the fluid within the balloon, creating a rapidly expanding bubble that collapses within microseconds. The bubble's expansion and collapse generates a series of sonic pressure waves that travel through the fluid-filled balloon and pass through soft vascular tissue, selectively cracking any hardened calcified plaque inside the vessel wall. After the calcium has been fractured, the integrated balloon can be expanded, performing angioplasty safely at low pressures. To view an animation of the Intravascular Lithotripsy procedure visit <http://shockwavemedical.com>.

About Shockwave Medical

Shockwave Medical, based in Santa Clara, Calif., is developing and commercializing innovative intravascular lithotripsy technology for the treatment of calcified peripheral vascular, coronary vascular and heart valve disease. For more information, visit www.shockwavemedical.com.