With her research, Omaida C. Velazquez, MD, searches for "what's missing today that we can make available for tomorrow's patients."

She presented at the 2017 Vascular Research Initiatives Conference, discussing gene therapy and peripheral arterial disease. Abstracts are being accepted through Jan. 10, 2018, for the May 9 conference.

The No. 1 duty every day is to current patients and therapies, said Dr. Velazquez. But despite best efforts, many patients' needs go unmet.

"So, our second priority is to come up with what's missing, from a patient perspective," said Dr. Velazquez, Chair of the Department of Surgery at the University of Miami Miller School of Medicine. "How are we not meeting their needs?"

For example, despite all the current options, many patients will face leg amputation. "They will go through the major indignity of losing a limb, and experience the physical and psychological trauma associated with it. So we ask, 'How can we prevent this? What are we missing?'"

Dr. Velazquez is researching the use of gene therapy to restore blood flow to a limb affected by peripheral arterial disease before gangrene sets in, in hopes of the limb healing itself and avoiding amputation. "We thought that if we were able to modify the adhesion molecule profile on the surface of some key cells within a limb, we can then induce a process of compensation where the limb that was in trouble from lack of blood flow can regain perfusion or blood flow faster. The limb can heal itself, essentially."

VRIC Abstracts Now Being Accepted

Abstracts for the 2018 Vascular Research Initiatives Conference are being accepted now, through Jan. 10, 2018. VRIC will be held May 9, 2018, in San Francisco, the day before the American Heart Association’s Arteriosclerosis, Thrombosis and Vascular Biology Scientific Sessions. Learn more about VRIC at vsweb.org/VRIC17.

Vascular trainees may apply for a VRIC scholarship until Jan. 10, 2018. The scholarship provides complimentary registration and a $1,000 travel stipend.

Gangrene is the end stage of PAD, for humans, and one of three manifestations of critical limb ischemia, she said.

Since presenting at VRIC in May, she and her team have been able to look at animal experiments to find that the
therapy does increase limb blood flow and decrease the extent of the gangrene. Moreover, the therapy can be delivered by intra-muscular injections.

They believe the research is translational and can eventually be tested in humans. The University of Miami has applied to protect the research as intellectual property, to aid in future funding partnership arrangements.

It is hope for the patient facing amputation, said Dr. Velazquez. "Gene therapy may be the missing piece."

Her research is always patient-based and has been since the beginning of her career, which included the University of Pennsylvania School of Medicine. "I'm a product of a prior generation of surgeons that have really imparted a triple mantra," she said, referring to her mentors at Penn.

"You take care of today, you plan to make it better for tomorrow and you train the next generation. I very much gravitate to that and stick to it like glue."

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