

## **PRELIMINARY ROUNDTABLE DESCRIPTION**

### **IVUS in Peripheral Interventions: Seeking Multi-Disciplinary Consensus**

*A Scientific Roundtable Sponsored by the  
Society of Cardiovascular Angiography and Interventions*

#### **BACKGROUND**

Peripheral artery disease (PAD) is a form of atherosclerosis affecting blood flow to the extremities. Affecting nearly 8.5 million Americans over 40, lower extremity PAD is the most common form of this disease and presents a risk for critical limb-threatening ischemia (CLTI), stroke, heart attack, as well as amputation of affected extremities in severe cases. Early detection and assessment of PAD is key to optimal management and reduction of complication risk and is aided by various imaging modalities including computed tomographic (CT) and magnetic resonance angiography (MRA) (Criqui et al, 2021).

Intravenous ultrasound (IVUS) represents yet another imaging modality which has shown great promise in improving capacity for PAD imaging, assessment, and treatment planning. IVUS continues to move toward standard of care in venous imaging and interventions for the potential advantages it presents to peripheral intervention outcomes when compared to the use of venography alone (Mosarla & Secemsky, 2020). In contrast to the arteries, veins are particularly prone to compression by other anatomical structures, factors which may be more accurately assessed by the more robust intraluminal imaging attainable via IVUS (Neglen & Raju, 2002). IVUS has the added advantage of facilitating assessment of other luminal features such as trabeculations, frozen valves, and mural thickness (Neglen & Raju, 2002).

A recent expert consensus panel determined that the level of support for IVUS varied by arterial segment and procedural stage- with iliac and SFA/popliteal interventions having the highest level of support during intra- and post-procedure optimization (Endovascular Today, 2020; Secemsky et al, 2022). Conversely, the panel unanimously found IVUS appropriate for use across all procedural phases in tibial arterial interventions. In the context of lower extremity venous interventions, IVUS was also deemed appropriate for use across all procedural phases. As clinical data and expert consensus supporting the use of IVUS in PAD continues to grow, so does the need for research and education to inform the re-evaluation of consensus guidelines and appropriate use criteria for IVUS in PAD.

This SCAI Scientific Roundtable on IVUS in Peripheral Interventions will be an independent, society-based, multidisciplinary exploration of the current state of IVUS in peripheral interventions in the field (including variation and gaps in practice), the current state of data and consensus on best practices, and recommendations on the right tools and settings for optimal patient outcomes and a strategy to affect and accelerate change.

The Roundtable assemblage will include representation from experts in interventional cardiology, interventional radiology, vascular surgery, vascular medicine and venous care. This 1/2-day virtual meeting will be held in Q3/Q4 2022.

The discussion and conclusions from the conference will be summarized in a proceedings document published in SCAI's official peer-reviewed journal (*JSCAI*) and will be submitted for co-publication in co-sponsoring societal publications.

## **ROUNDTABLE DISCUSSION QUESTIONS/TOPICS**

**DRAFT AGENDA** (to be further fleshed out by cosponsoring societal representatives)

- **State of the Art**
  - Examine current pitfalls in peripheral arterial intervention (increase amputations) and iliofemoral intervention (stent embolization)
  - Examine growth of IVUS use during coronary intervention
  - Describe current application of IVUS for arterial/venous intervention
- **Review of the Evidence**
  - Review systematic review of iliofemoral venous stenting data
  - Review systematic review of lower extremity arterial intervention data
  - Review use of IVUS in other peripheral beds: IVC, aorta, pulmonary artery, renal/mesenteries
- **Expert Group Consensus**
  - Review Smith Center Consensus Document on IVUS use for lower extremity arterial and venous intervention
  - Discuss strengths and limitations
  - Describe future needs for consensus and guideline documents, societal endorsement
- **Future Directions**
  - Discuss need for additional prospective data – what data? How? Expected impact?
  - Discuss need to improve workflow and implementation of intravascular imaging
  - Discuss educational and training needs
  - Explore cost considerations and insurance/payer coverage
  - Discuss potential solutions to valuation hurdles including advocacy with CMS

## **CONFERENCE LOGISTICS AND ORGANIZATIONAL STRUCTURE**

*Dates:* Q3/Q4 2022

*Location:* virtual

*Number of faculty attendees:* Up to 16 faculty participants will contribute to the conference deliberation.

*Duration:* 1/2 day

*Plenary presentations:* The roundtable will begin with a brief review of the emerging science and review of the meeting objectives provided by the conference chairs

*Consensus Process:* A summary of the discussions will be reported back to the full assembly with a consensus building process to formulate the final conference recommendations.

*Facilitation:* Co-chairs nominated by each co-sponsoring will form the planning committee and will be responsible for facilitating the roundtable, including identifying invitees and plenary session presenters and topics. The co-chairs and group discussion leaders will constitute the writing committee for the published roundtable proceedings paper.

## OUTPUT

Published proceedings document to be authored by the conference chairs and breakout group discussion leaders. This manuscript will be published in JSCAI and we are hopeful they will be co-published by co-sponsoring societies.

## Bibliographic citations

1. Criqui, M. H., Matsushita, K., Aboyans, V., et al. (2021). Lower extremity peripheral artery disease: contemporary epidemiology, management gaps, and future directions: a scientific statement from the American Heart Association. *Circulation*, 144(9), e171-e191.
2. Mosarla R.E. & Secemsky E.A. (2020). *Peripheral Matters: IVUS-Guided Peripheral Vascular Intervention*. American College of Cardiology. July 2020. Retrieved from <https://www.acc.org/latest-in-cardiology/articles/2020/07/01/12/42/ivus-guided-peripheral-vascular-intervention>.
3. Neglén P, Raju S. (2002). *Intravascular ultrasound scan evaluation of the obstructed vein*. *J Vasc Surg*. 2002;35(4):694-700. doi:10.1067/mva.2002.121127.
4. First Global Consensus on the Appropriate Use of IVUS in Peripheral Vascular Disease Interventions Presented at VIVA 2021. (2021). *Endovascular Today*. Retrieved from <https://evtoday.com/news/first-global-consensus-on-the-appropriate-use-of-ivus-in-peripheral-vascular-disease-interventions-presented-at-viva-2021>.
5. Secemsky EA, Parikh SA, Kohi M, et al. (2022). Intravascular ultrasound guidance for lower extremity arterial and venous interventions [published online ahead of print, 2022 Apr 19]. *EuroIntervention*. 2022;EIJ-D-21-00898. doi:10.4244/EIJ-D-21-00898