

ACC/AHA/SCAI guideline summary: Intravascular ultrasound (IVUS) at the time of percutaneous coronary intervention (PCI)

Class IIa - The weight of evidence or opinion is in favor of the usefulness of IVUS at the time of PCI in the following settings:

- Following PCI with stenting, to assess the adequacy of deployment through examination of the extent of stent apposition and determination of the minimum luminal diameter.
- Following diagnostic angiography to determine the mechanism of in-stent restenosis (inadequate expansion versus neointimal proliferation) so that appropriate therapy (repeat balloon expansion versus brachytherapy) is selected. (NOTE: Two randomized trials published after the guidelines demonstrated improved outcomes with drug-eluting stents compared to brachytherapy for in-stent restenosis).
- Following diagnostic angiography to evaluate a coronary obstruction at a location difficult to image in a patient with a suspected flow-limiting stenosis.
- Following PCI to assess a suboptimal angiographic result.
- Before PCI to establish the presence and distribution of coronary calcium when adjunctive rotational atherectomy is contemplated.
- Before PCI to determine plaque location and circumferential distribution in anticipation or directional coronary atherectomy.

Class IIb - The weight of evidence or opinion is less well established for the usefulness of IVUS in the following settings:

- Following diagnostic angiography which reveals no focal stenoses or mild coronary artery disease to further evaluate the extent of atherosclerosis in patients with characteristic anginal symptoms and a positive functional study.
- Following diagnostic angiography to assess lesion characteristics and vessel dimensions in the selection of an optimal revascularization device.
- Following cardiac transplantation, to aid in the diagnosis of coronary disease.

Class III - There is evidence and/or general agreement that IVUS during PCI is not useful in the following setting:

- Following diagnostic angiography when the angiographic diagnosis is clear and no interventional treatment is planned.

Data from Smith, SC Jr, Feldman, TE, Hirshfeld, JW Jr, et al. ACC/AHA/SCAI 2005 guideline update for percutaneous coronary intervention a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (ACC/AHA/SCAI Writing Committee to Update the 2001 Guidelines for Percutaneous Coronary Intervention). J Am Coll Cardiol 2006; 47:e1.