The assessment of intermediate coronary lesions can be done with IVUS or pressure-wire derived fractional flow reserve (FFR). Both have their advantages and limitations. There are not randomized trials comparing these strategies. There are small registries from the same center but subjected to important biases. These registries suggest a very high (80-90%) rate of induced PCI by IVUS.

In two public institutions the strategy for intermediate lesion evaluation has been different in previous years: one was based in IVUS (IVUS Center) and the other one based in FFR (FFR Center). We have compared the outcome of patients with intermediate lesions (40-70%) assessed in a 6 years period (2004-2009) in both centers. We selected two paired groups by propensity score matching. The criteria for revascularization was FFR < 0.75 and a minimum lumen area < 4mm² in vessels ≥ 3 mm and < 3.5 mm² in vessels 2.5-3 mm with plaque burden > 50%.

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The assessment of intermediate lesions with IVUS induced a higher degree of revascularization (51% vs 28%) but lower than the previously reported. This difference in treatment did not influence the outcome. At two year follow up both strategies result safe with a very low rate of lesion-related events. The use of MLA cut-off values more adjusted to the vessel size and the combination with other parameters (plaque burden and lumen area stenosis) could increase the cost-effectiveness of the IVUS approach. IVUS may play a double role in these cases guiding PCI procedures specially over complex lesions (bifurcation, ostial, ….)