

I Prefer Angio-Guided PCI

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The main reasons to use intravascular ultrasound (IVUS) in percutaneous coronary intervention (PCI) are confirmation of lesion significance and optimization of PCI. Lesion significance means that does this lesion provoke real ischemia and should we treat it? And, PCI optimization includes precise understanding lesion morphology, selection of optimal stent size, length, landing zones, avoiding stent edge dissection, mal-apposition, under-expansion. In the meta-analysis to compare the MACE between IVUS-guided vs angio-guided PCI in bare metal stent implantation by Parise H et al, IVUS-guided PCI showed significantly larger minimal lumen diameter (MLD), lower binary restenosis rate at 6 Mo., lower repeated revascularization rate, but it failed to show mortality or myocardial infarction (MI) rate reduction. In the era of drug-eluting stent (DES) implantation, the major adverse cardiac event (MACE) reduction effect of IVUS-guided PCI was ambiguous especially in early period, prospective clinical trials. In the AVIO trial with 284 patients who had complex lesions could not show the MACE reduction even though statistically significantly larger post-PCI MLD in IVUS-guided group. Recent large meta-analysis using 29,068 patients from 21 studies, IVUS-guided PCI showed significant benefit in MACE, death and stent thrombosis. But, those benefits came from complex lesion subsets, e.g. unprotected left main disease, long lesion, bifurcation lesion, acute coronary syndrome, and diabetic patients. IVUS-guided PCI failed to show MACE reduction in DES implantation in short and simple lesions, and stable angina patients. Therefore, routine or unplanned use of IVUS guidance can't be justified in DES era. Interventionist should use IVUS selectively in DES implantation after fine checking of angiography to find complex lesion subset (e.g. bifurcation, long, unprotected left main lesion) and considering patients clinical subset (e.g. acute coronary syndrome, diabetes, renal insufficiency).

References

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