RESEARCH SUMMARY

Intravascular Imaging–Guided or Angiography-Guided Complex PCI

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CLINICAL PROBLEM

During percutaneous coronary intervention (PCI), guidance with intravascular imaging, with the use of intravascular ultrasonography or optical coherence tomography (OCT), can optimize stent implantation. However, for patients with complex coronary-artery lesions, data regarding clinical outcomes after intravascular imaging–guided PCI as compared with outcomes after angiography-guided PCI are limited.

CLINICAL TRIAL

Design: A prospective, multicenter, open-label, randomized trial in South Korea evaluated whether intravascular imaging–guided PCI would result in better clinical outcomes than angiography-guided PCI in adults with complex coronary-artery lesions.

Intervention: 1639 patients were assigned in a 2:1 ratio to undergo either intravascular imaging–guided PCI, with the use of ultrasonography or OCT, or angiography-guided PCI. The primary end point was target-vessel failure, which was defined as a composite of death from cardiac causes, target-vessel–related myocardial infarction, or clinically driven target-vessel revascularization.

RESULTS

Efficacy: At a median follow-up of 2.1 years, the incidence of target-vessel failure was lower in the intravascular imaging group than in the angiography group.

Safety: The incidence of procedure-related complications during the index hospitalization appeared to be similar in the two groups.

LIMITATIONS AND REMAINING QUESTIONS

- The trial was unblinded, and the operator could not be unaware of the patient's assigned group.
- Stent optimization as defined on the basis of intravascular imaging occurred in less than half the patients.
- All the patients were East Asian, and more than half the patients were enrolled at one trial center, which potentially limits the generalizability of the findings.

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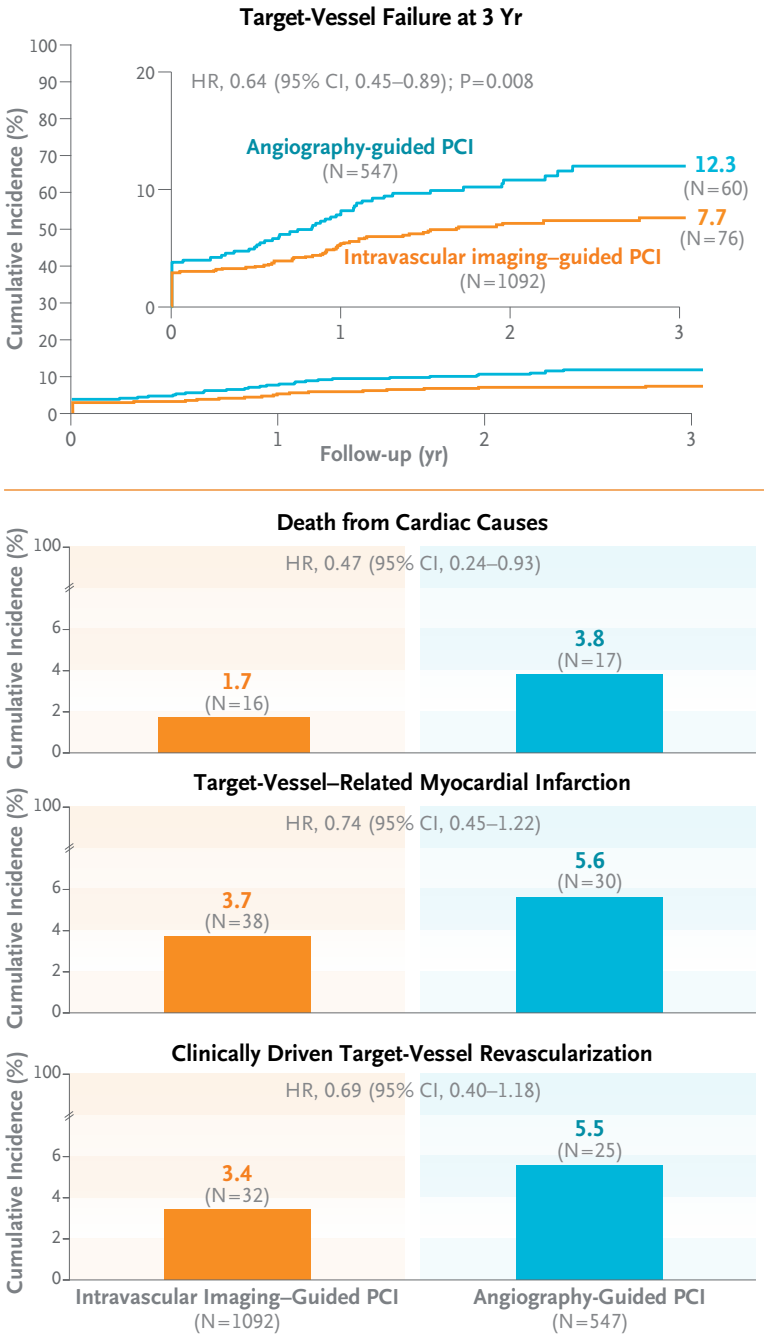

CONCLUSIONS

Among patients with complex coronary-artery lesions, intravascular imaging–guided PCI led to a lower incidence of a composite of death from cardiac causes, target-vessel–related myocardial infarction, or clinically driven target-vessel revascularization than angiography-guided PCI.