### Co-primary endpoints

- **post-PCI minimum stent area assessed by OCT**
  - OCT-guided PCI: 5.72 mm²
  - Angiography-guided PCI: 5.36 mm²
  - Difference: 0.36 mm², 95% CI 0.21 to 0.51, p<0.001

- **2-year rate of target vessel failure (composite of cardiac death, target vessel myocardial infarction, or ischaemia-driven target vessel revascularisation)**
  - Kaplan-Meier estimated rate:
    - OCT-guided PCI: 7.4%
    - Angiography-guided PCI: 8.2%
  - Hazard ratio: 0.90, 95% CI 0.67 to 1.19, p=0.45

### Secondary endpoint

- **Stent thrombosis within 2 years**
  - Rate:
    - OCT-guided PCI: 0.5%
    - Angiography-guided PCI: 1.4%
  - Hazard ratio: 0.36, 95% CI 0.14 to 0.91

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**Study population**

Patients with medication-treated diabetes and/or complex lesions.

**Where?**

18 countries, 80 sites

**Who and what?**

- 2,487 patients randomised 1:1
  - OCT-guided PCI
  - Angiography-guided PCI

**Impact on clinical practice**

OCT-guided PCI led to a larger minimum stent area, enhanced the safety of the PCI procedure and resulted in nearly a two-thirds reduction in stent thrombosis during 2-year follow-up. However, OCT guidance did not reduce the 2-year rate of target vessel failure compared with angiography-guided PCI.

**Conclusion**

Optical coherence tomography (OCT)-guided percutaneous coronary intervention (PCI) leads to a larger minimum stent area but does not reduce the 2-year rate of target vessel failure compared with angiography-guided PCI.

**Study objectives**

The ILUMIEN IV trial investigated whether OCT-guided PCI is superior to angiography-guided PCI for minimum stent area and target vessel failure in complex patients and lesions.