

SUPPLEMENTARY DATA

Table S1. Comparison of rEpic04 Navitian results with published coronary microcatheter evidence

Study / Device	Study design	Population / Lesions	Lesion complexity	Primary role of microcatheter	Crossing / Device performance	Device-related safety	Clinical outcomes/complications
rEpic04 Navitian (current study)	Prospective, multicenter, multinational (Spain–Portugal) , observational PMCF under MDR 2017/745	102 patients/115 lesions	CTO 57.4%; AHA B2/C 87.8%; calcification 47%; TIMI 0 48.7%; median length 30 mm	Guidewire support, guidewire exchange, distal contrast/saline infusion	95.2% evaluable device crossing (100/105 lesions where guidewire crossed); overall device crossing 87.0% (100/115)	No device failures (no rupture, no kinking, no difficult retrieval)	Procedural complications (4.3%) occurred after downstream device use
Wilson et al.¹, NHancer microcatheter (EuroIntervention 2016)	Prospective, first-in-human/early clinical experience; multicenter (Europe)	92 CTO procedures	CTO-only population; high complexity by design	Dedicated CTO microcatheter; locking support	Device contributed to ≥ 1 procedural step in 85.9% ; sole microcatheter in 68.4% of successful cases	No device failures reported	Overall procedural complication rate 1.1% (1 tamponade after wire exit; no MI, emergency surgery, or death)
Sidik et al.², BIOMICS context (2024)	Registry/pooled real-world CTO experience (literature synthesis)	CTO PCI cohorts using various microcatheters	CTO populations; complexity varies by registry	CTO microcatheters (e.g., Corsair family)	Reported CTO-PCI success typically mid-70% to mid-80% , highly dependent on lesion complexity and strategy	Device mechanical failure uncommon	Complications mainly related to CTO complexity and downstream interventions
Contemporary CTO registries³ (e.g., ERCTO)	Large prospective registries	Thousands of CTO PCIs	High J-CTO scores common; retrograde use in complex cases	Microcatheters integral to modern CTO algorithms	Overall CTO technical success ~85–90% (procedure-level, not device-specific)	No consistent signal of microcatheter-specific failure	Complication rates driven by lesion complexity, access, and technique rather than microcatheter type

* Device effectiveness calculated in evaluable lesions where guidewire crossing was achieved (n = 105).

CTO, chronic total occlusion; MDR, Medical Device Regulation; MI, myocardial infarction; PCI, percutaneous coronary intervention; TIMI, Thrombolysis in Myocardial Infarction; TLF, target lesion failure.

Table note: Cross-study comparisons should be interpreted cautiously due to differences in study design, lesion subsets, endpoints, and attribution of adverse events

REFERENCES OF THE SUPPLEMENTARY DATA

1. Wilson SJ, Maeremans J, Walsh SJ, et al. The first clinical experience with a novel "locking" microcatheter in chronic coronary total occlusions. *EuroIntervention*. 2017;12:e1883–e1888.
2. Sidik N, McEntegart M, Joshi F, et al. Safety and Effectiveness of a Novel Microcatheter in Coronary Chronic Total Occlusions-The BIOMICS Study. *J Soc Cardiovasc Angiogr Interv*. 2024;3:102017.
3. Vadala G, Galassi AR, Werner GS, et al. Contemporary outcomes of chronic total occlusion percutaneous coronary intervention in Europe: the ERCTO registry. *EuroIntervention*. 2024;20:e185–e197.