

# Treatment of CTO: experience from a large worldwide registry

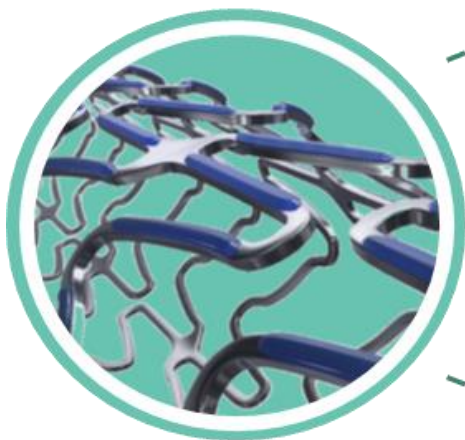
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I do not have any potential conflict of interest to declare

- ◆ **Chronic total occlusion (CTO)** is a challenging CAD subset usually associated with worse long-term prognosis.
- ◆ We aimed to evaluate **contemporary** treatment **techniques** and **outcomes** of **PCI-CTO** patients in a large real-world patient population.



## Ultimaster DES

<b>Platform</b>	Strut thickness ( <b>80 μm</b> ) Co-Cr Open cell design
<b>Drug Carrier</b>	PDLLA-PCL copolymer <b>resorbed</b> within <b>3-4 months</b>
<b>Coating</b>	<b>Abluminal</b> bioresorbable <b>gradient coating</b> technology
<b>Drug</b>	<b>Sirolimus</b> - 3.9 μg/mm stent length

## E-ULTIMASTER registry

4 continents, 50 countries, 376 sites

Study enrolment completed, follow-up ongoing  
**> 37,000 patients enrolled**

**Interim analysis**  
1-year follow-up  
n=25,990 patients



**Patients with  
≥1 treated CTO  
lesion n=1309**

## CLINICAL FOLLOW-UP



An independent Clinical Event Committee reviewed and adjudicated  
all endpoint-related serious adverse events

## Baseline patient characteristics

	Treated CTO patients n=1309
Age, years	<b>64.1±10.6</b>
Gender (male), %	<b>81.3</b>
Hypertension, %	<b>65.4</b>
Diabetes, %	<b>32.9</b>
Hypercholesterolemia, %	<b>61.4</b>
Current smoker, %	<b>18.8</b>
Renal impairment, %	<b>7.8</b>
Previous PCI, %	<b>33.4</b>
ACS, %	<b>27.3</b>

**ACS:** acute coronary syndrome; **CTO:** chronic total occlusion; **PCI:** percutaneous coronary intervention

# Baseline lesion/procedure characteristics

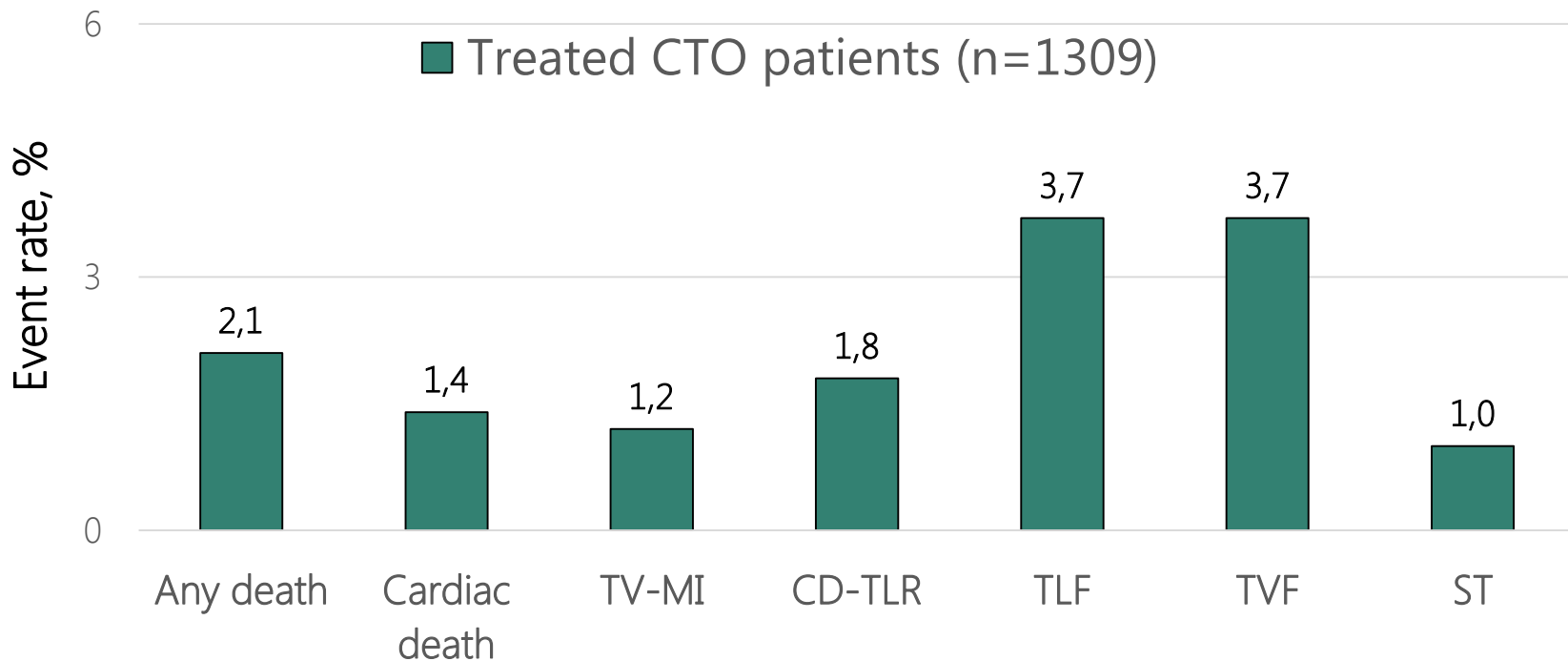
	Treated CTO patients n=1309
Radial access, %	<b>70.1</b>
Mean N of lesions identified	<b>1.9±1.0</b>
Mean N of lesions treated	<b>1.6±0.8</b>
Vessel treated	
RCA, %	<b>48.5</b>
LAD, %	<b>44.4</b>
CFX, %	<b>29.4</b>
LM, %	<b>2.9</b>
Mean N of implanted stents/patient	<b>1.9±1.1</b>
Total stent length/patient, mm	<b>50.5±31.5</b>
Imaging guidance (IVUS+OFDI), %	<b>12.5</b>

**IVUS:** intravascular ultra sound; **OFDI:** optical frequency domain imaging **RCA:** right coronary artery, **LAD:** left anterior descending artery; **CFX:** circumflex artery; **LM:** Left main artery

	Treated CTO patients n=1309
Approach	
Antegrade, %	<b>83.2</b>
Retrograde, %	<b>16.8</b>
Mean radiation dose, mGY	<b>1732.4±5248.8</b>
Mean contrast volume, ml	<b>230.5±117.0</b>
Microcatheter use/lesion, %	<b>33.2</b>
Post-dilatation/lesion, %	<b>58.9</b>
Bifurcation/lesion, %	<b>6.6</b>
Moderate to severe calcification/lesion, %	<b>13.6</b>



# Clinical outcomes at 1 year



**CD-TLR/TVR:** clinically-driven target lesion/vessel revascularization; **MI:** myocardial infarction; **ST:** stent thrombosis (definite and probable); **TLF:** target lesion failure: composite of cardiac death, TV-MI and CD-TLR; **TVF:** target vessel failure: composite of cardiac death, TV-MI and CD-TVR; **TV-MI:** target vessel MI

# Predictors of TLF at 1-year

	Odds ratio (95% confidence interval for OR)	p-value	
Male gender	<b>0.54 (0.29-1.01)</b>	0.05	Decreased risk
Radial access	<b>0.38 (0.21-0.69)</b>	0.002	
STEMI	<b>3.47 (1.66-7.22)</b>	0.001	Increased risk
N of stents implanted	<b>1.3 (1.04-1.63)</b>	0.02	

**Results based on stepwise logistic regression, with covariates considered for entering the model:**

Age, gender, body mass index, diabetes, hypertension, hypercholesterolemia, smoking, previous MI, previous PCI, renal impairment, acute coronary syndrome, multi-vessel disease, N lesions identified, N lesions treated, vessel treated, N of stents implanted, length of stents implanted, in-stent restenosis, chronic total occlusion, bifurcation, long lesions, small vessels, calcification, AHA/ACC lesion classification, radial access

- ◆ 1-year follow up evidence in **CTO** patients shows **good clinical outcomes** of the **new generation sirolimus-eluting** Ultimaster DES
- ◆ Reported data provides relevant insights into the **contemporary PCI trends** in daily clinical practice of complex CTO patients world-wide.
- ◆ Multivariate analysis identifies gender, STEMI-clinical presentation, access site and number of implanted stents as significant **predictors of TLF** in real-world CTO patients.