Enhanced stent visualization impact on older MI patients with multivessel disease

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on behalf of the FIRE trial investigators

https://elementrials.org

Potential conflicts of interest

Speaker's name : Marta Cocco

☑ I do not have any potential conflict of interest to declare.

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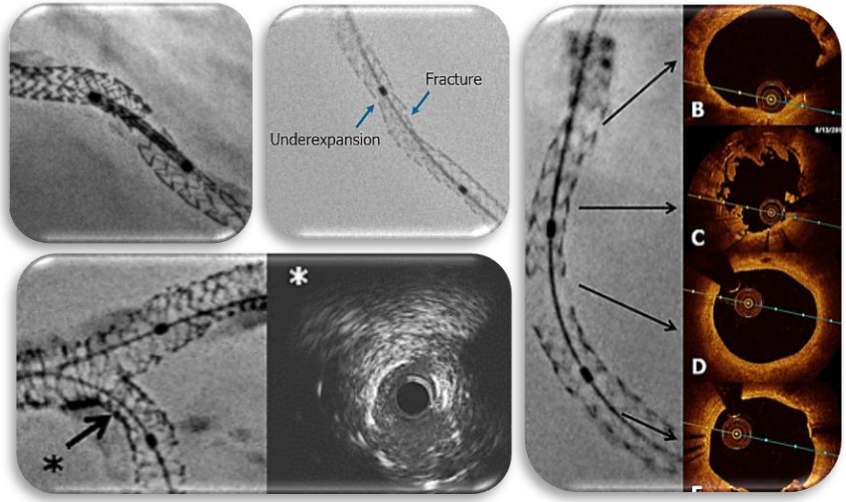
Background

Enhanced Stent Visualization (ESV)

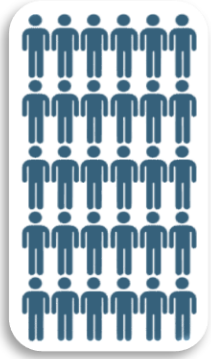
- ✓ **High-quality real-time** enhanced stent visualization during and after stent positioning.
- ✓ Assessment of **stent integrity** and/or **stent underexpansion**, gap assessment.
- ✓ Improved stent characterisation versus coronary angiography alone and good correlation with IVUS for stent underexpansion.
- ✓ **Alternatively** or **complementary** to more complex intracoronary imaging techniques (**IVUS or OCT**).



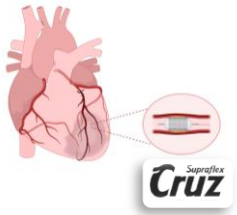
Background

The CLASSY-FIRE is a prespecified substudy of the FIRE TRIAL

75+ AMI pts with MVD (n=1445)



Successfull PCI of the culprit lesion

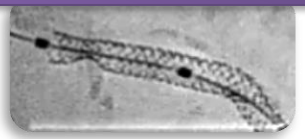


Physio-guided complete arm (n= 720)

Culprit-only arm (n= 725)

On top of a deemed successful PCI

ESV-guided optimization (n = 331)

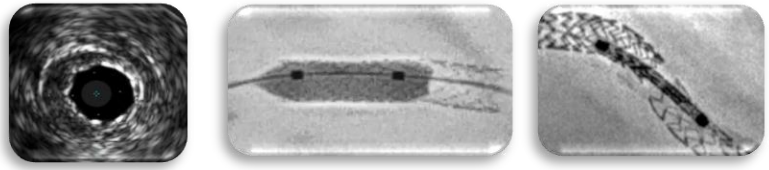


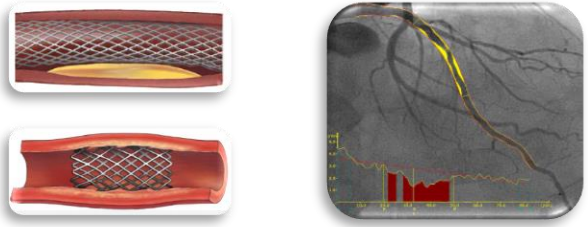
Objectives

- To evaluate the rate of post-PCI ESV findings prompting further procedural optimization.
- To assess the minimal lumen diameter (MLD) acute gain after ESV-guided optimization.
- To compare the rate of events between patients who underwent an ESV-guided PCI versus angio-guided PCI.

How was the study executed?

Recording of any procedural optimization after ESV





QCA MLD calculation pre and post ESV optimization

Primary Endpoint

VOCE (vessel-oriented composite endpoint) at 1 year: composite of cardiac death, target-vessel MI or ischemia-driven TVR

What are the essential results?

	Patients (n = 1445)		
Characteristic	**ESV-guided PCI (n=331)**	**Angio-guided PCI (n=1114)**	p
Age – years	81±4	81±4	0.993
Female – no. (%)	120 (36.2)	408 (36.6)	0.933
Diabetes – no. (%)	100 (30.2)	363 (32.6)	0.557
Prior PCI – no. (%)	61 (18.4)	196 (17.6)	0.771
PAD – no (%)	**79 (23.8)**	**170 (15.2)**	**0.002**
STEMI – no. (%)	87 (26.3)	422 (37.8)	**0.005**
NSTEMI – no. (%)	**244 (73.7)**	**692 (62.2)**	
LAD	152 (45.9)	501 (45.0)	0.802
LCX	60 (18.1)	200 (17.9)	0.765
LM	**34 (10.3)**	**44 (3.9)**	**0.032**
RCA	78 (23.6)	346 (31.1)	0.152
RI	7 (2.1)	23 (2.0)	0.821

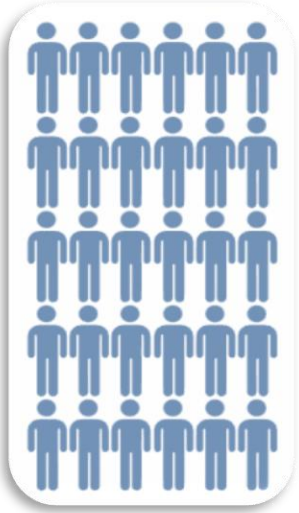
Total vessels (CLs + NCLs) = 3344

ESV Yes → patients = 331; vessels = 794

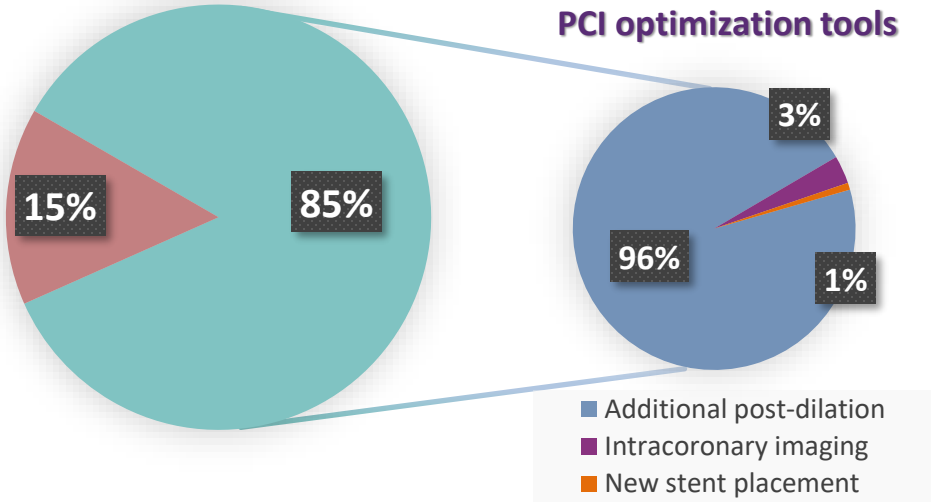
ESV No → patients = 1114; vessels = 2550

What are the essential results?

ESV +

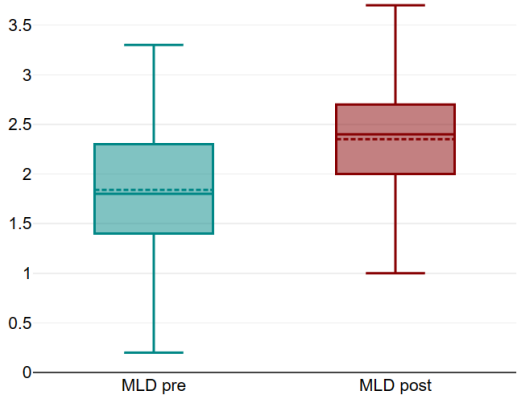


ESV-induced optimizazion



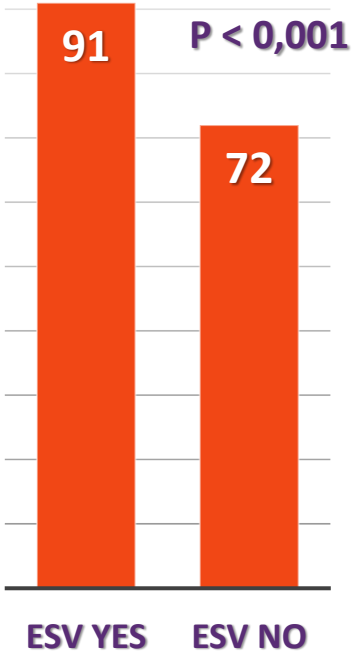
MLD acute gain 0,43 mm [95%CI 0.243-0.618]

P < 0,001



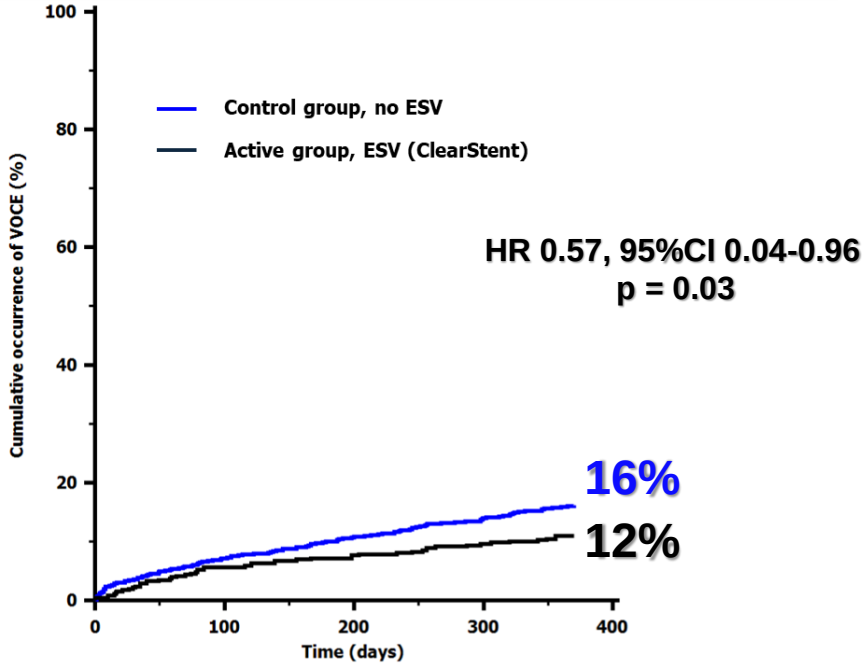
What are the essential results?

Post-dilation rate



* Intracoronary imaging use did not differ between groups.

VOCE (vessel-oriented composite endpoint) at 1 year: composite of cardiac death, target-vessel MI or ischemia-driven TVR



Conclusions

- **PCI optimization through imaging and/or physiology is impactful on prognosis but still largely underused.**
- **ESV use during complex PCI triggers procedural optimization, significantly increasing the post-dilation rate, as compare to the ESV negative group.**
- **ESV-driven PCI optimization leads to a significant acute MLD gain and reduction of VOCE at 1 year**
- **ESV could represent a simple and easy gatekeeper for imaging or further procedural optimization.**

The essentials to remember

Why?	Intracoronary imaging use for PCI optimization is largely underused, especially in older patients.
What?	To investigate the impact of ESV use on AMI patients of the FIRE trial
How?	By recording ESV-triggered procedural optimizations, MLD acute gain and VOCE at 1 year.
What are the results?	Post-dilation rate is significantly higher in the ESV + group and is associated with significant acute MLD gain and reduction of VOCE at 1 year.
Why is this important?	CLASSY FIRE substudy provides evidence supporting the use of ESV during complex PCI as a simple and easy gatekeeper for imaging or further procedural optimization.

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