

ROLLERCOASTR-EPIC22 TRIAL SUMMARY

Rotational Atherectomy, IVL or Laser for the Management of Calcified Coronary Stenosis

Alfonso Jurado-Román, Antonio Gómez-Menchero, Ignacio J. Amat-Santos, Juan Caballero-Borrego, Soledad Ojeda, Raymundo Ocaranza-Sánchez, Santiago Jiménez-Valero, Guillermo Galeote, and Raúl Moreno

Adapted from: Jurado-Román et al. REC Interv Cardiol. 2023;5(4):279-286; Jurado, The RollerCoaster-EPIC22 trial, presented at EuroPCR 2024

WHY?

Lack of randomized evidence comparing advanced plaque modification techniques

WHAT?

Safety and efficacy of RA, IVL and ELCA

HOW?

Prospective, randomized controlled trial with intention-to-treat analysis (ITT)

WHY IS THIS STUDY IMPORTANT?

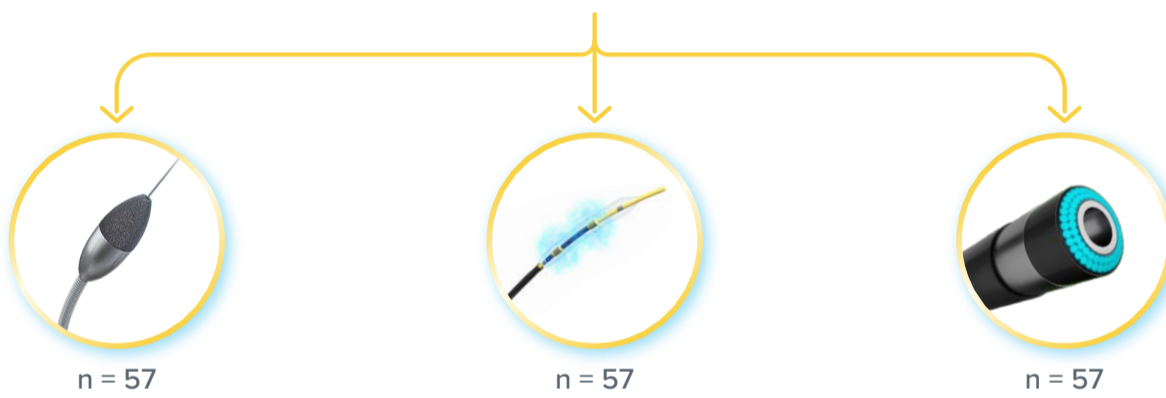
The study offers insights from the first, large randomized study on the importance of device selection and complementary nature of calcium modification tools

WHAT ARE THE RESULTS?

Similar success rate and minimum stent area (MSA). Significant need of 2^o plaque modification technique (PMT) in the 3 arms. IVL non-inferior to RA regarding % stent expansion. ELCA did not achieve non-inferiority in ITT analysis. Zero severe procedural complications associated with IVL.

PCI OF ANGIOGRAPHICALLY MODERATE OR SEVERE CALCIFIED LESIONS

n = 171



Need of 2nd PMT 6 (10.5%)

6 (10.5%)

8 (14%)

P=0.82

1 Uncrossable 5 Undilatable

4 Uncrossable 2 Undilatable

6 Uncrossable 2 Undilatable

P=0.07

PRIMARY ENDPOINT

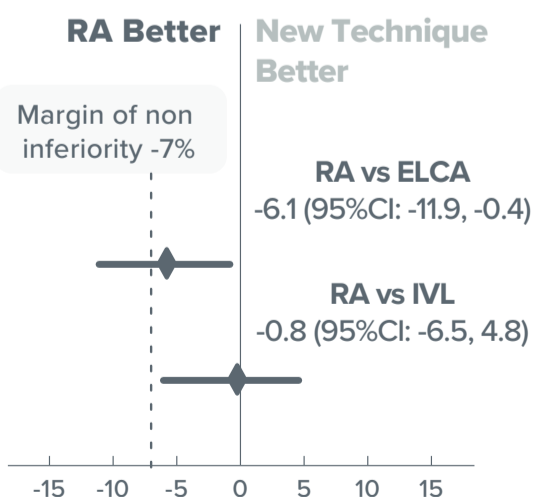
Percentage of stent expansion by OCT

SECOND ENDPOINT

Device and procedural success, crossover rate, 1y major cardiac event (CD, TVMI, TLR, ST)

STENT EXPANSION

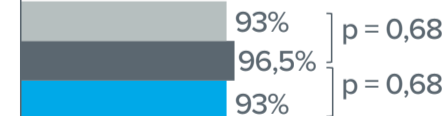
(Intention to treat analysis)



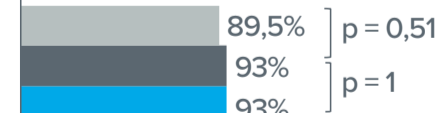
PROCEDURAL OUTCOMES

(final stenosis <30% post op)

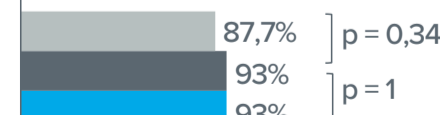
ANGIOGRAPHIC SUCCESS



PROCEDURAL SUCCESS



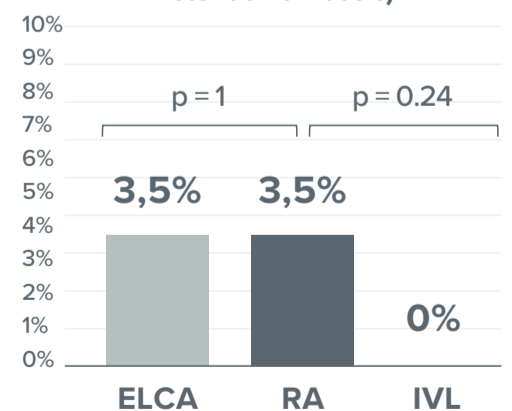
CLINICAL SUCCESS



■ ELCA ■ RA ■ IVL

SEVERE PROCEDURAL COMPLICATIONS

(death, perforation, flow-limiting dissections, abrupt vessel closure, stent thrombosis)



Investigator's Limitations of Study: Randomization immediately after angiography, without knowledge of type of lesion or calcium pattern; non-consecutive patients; difficult to interpret the combined effect of PMT; difficult to interpret the ITT.

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