

# ESC Hotline-III

**A randomised comparison of dual versus triple antiplatelet therapy in patients with non-ST segment elevation acute coronary syndrome**  
**The ELISA-2 trial**

European Society of Cardiology  
Stockholm, 6 Sep. 2005

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# Presenter Disclosure Information

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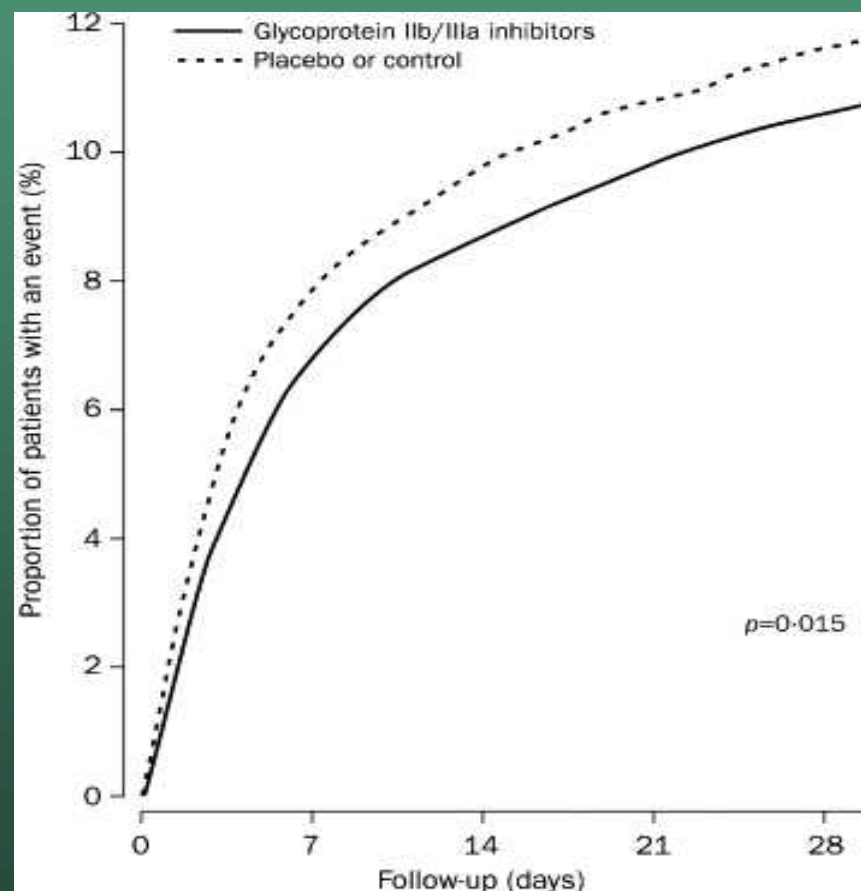
**There is no relationship to disclose**

# Background

Glycoprotein IIb/IIIa inhibitors beneficial in NSTEMI ACS :

Particularly in

- Positive cardiac troponin
- ST depression
- Males



# Background

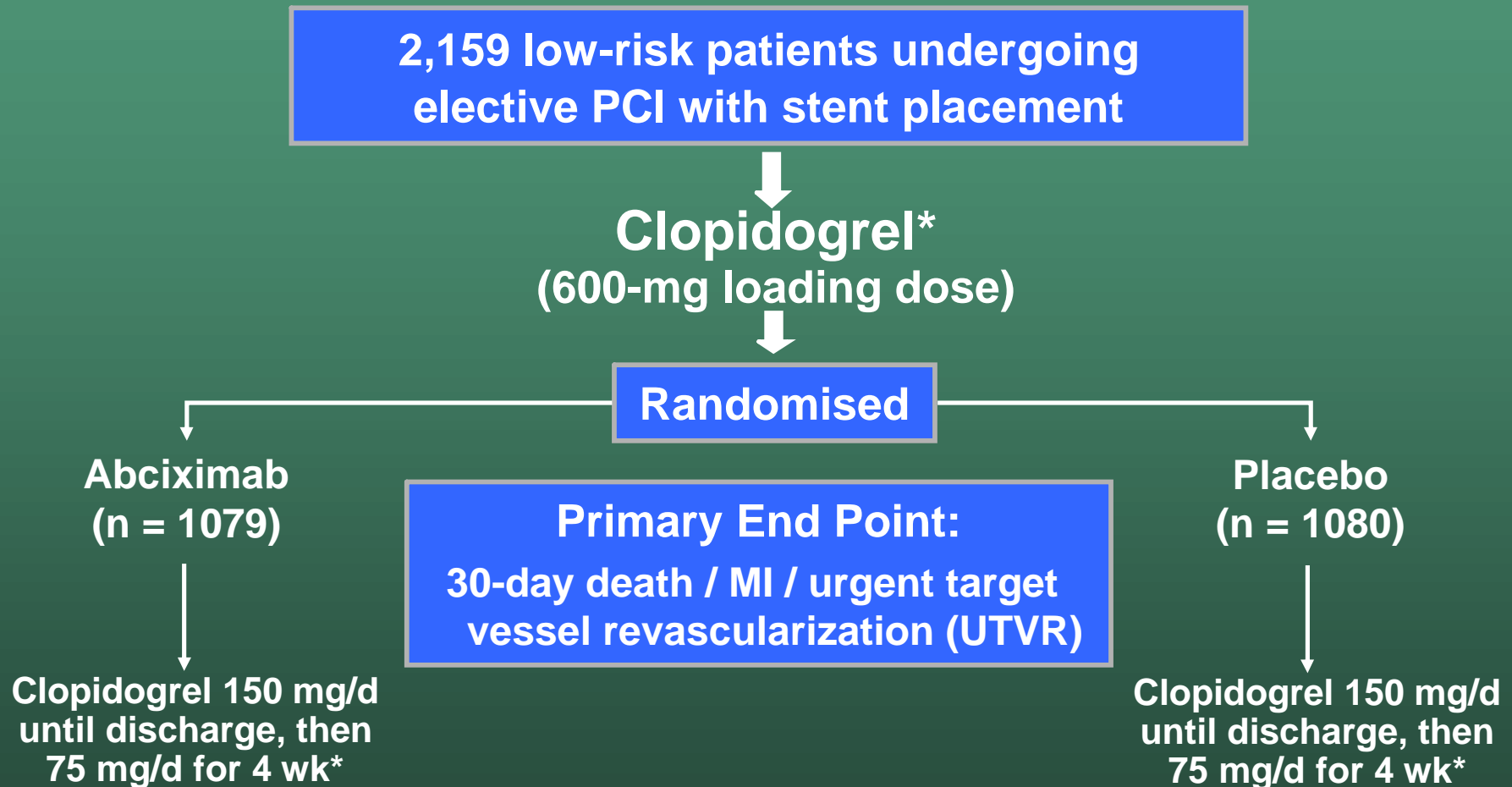
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**However,**

**in most trials no concomitant *upstream*  
use of Clopidogrel!**

# ISAR-REACT

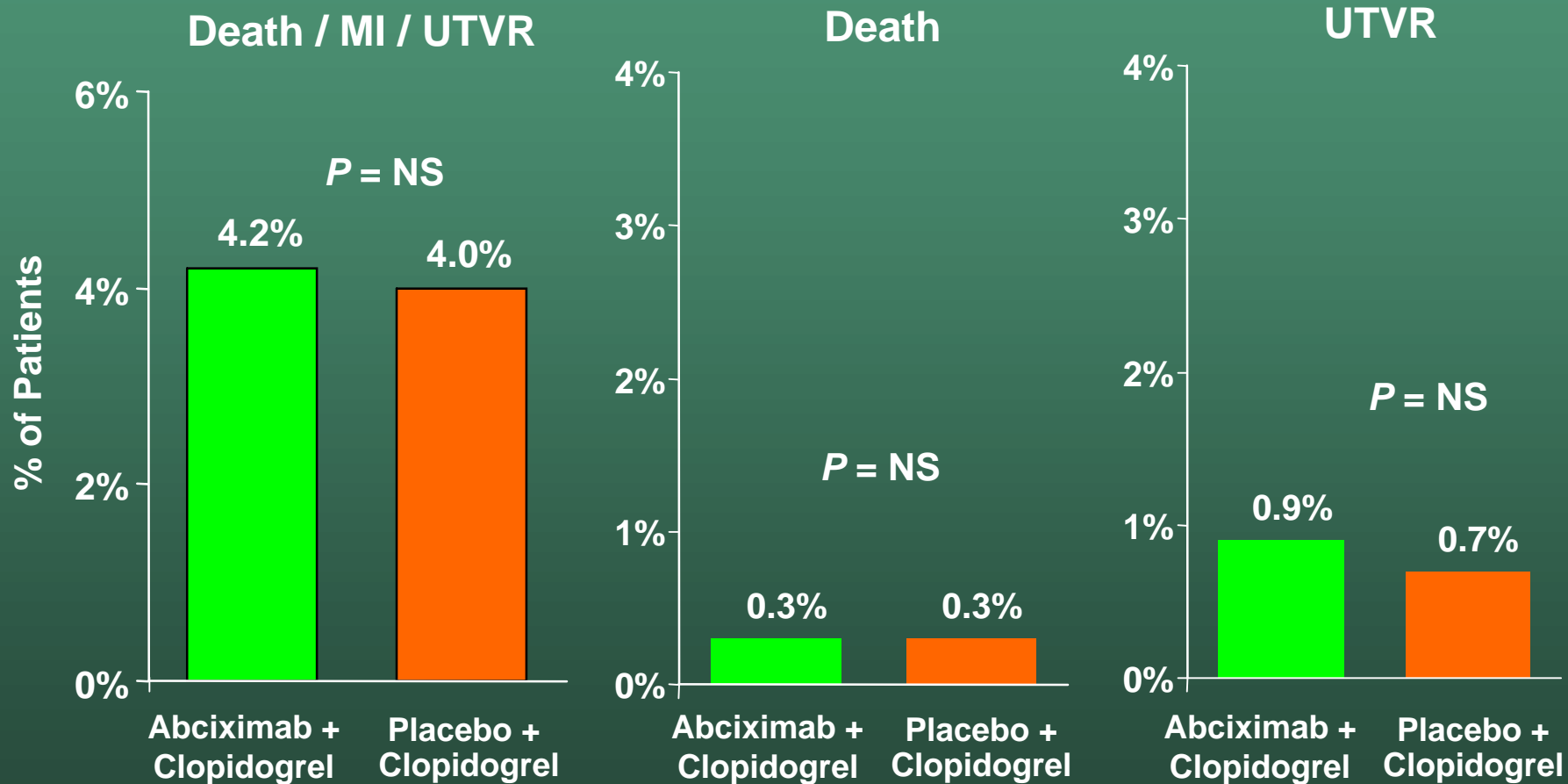
## Background



\*In addition to Aspirin.  
Kastrati A, et al. *N Engl J Med.* 2004;350:232-238.

# Background

## ISAR-REACT End Point



\*UTVR = urgent target vessel revascularization  
Kastrati A, et al. *N Engl J Med.* 2004;350:232-238.

# Objective

**ELISA-2** was designed to compare **Dual** antiplatelet (Clopidogrel 600 mg and Aspirin) vs. **Triple** antiplatelet (Clopidogrel 300 mg, Aspirin and Tirofiban) therapy in patients with NSTEMI ACS undergoing PCI

## Design

Randomised, single centre, open label

# Inclusion criteria

- Ischemic chest pain at rest with last attack < 24 hours

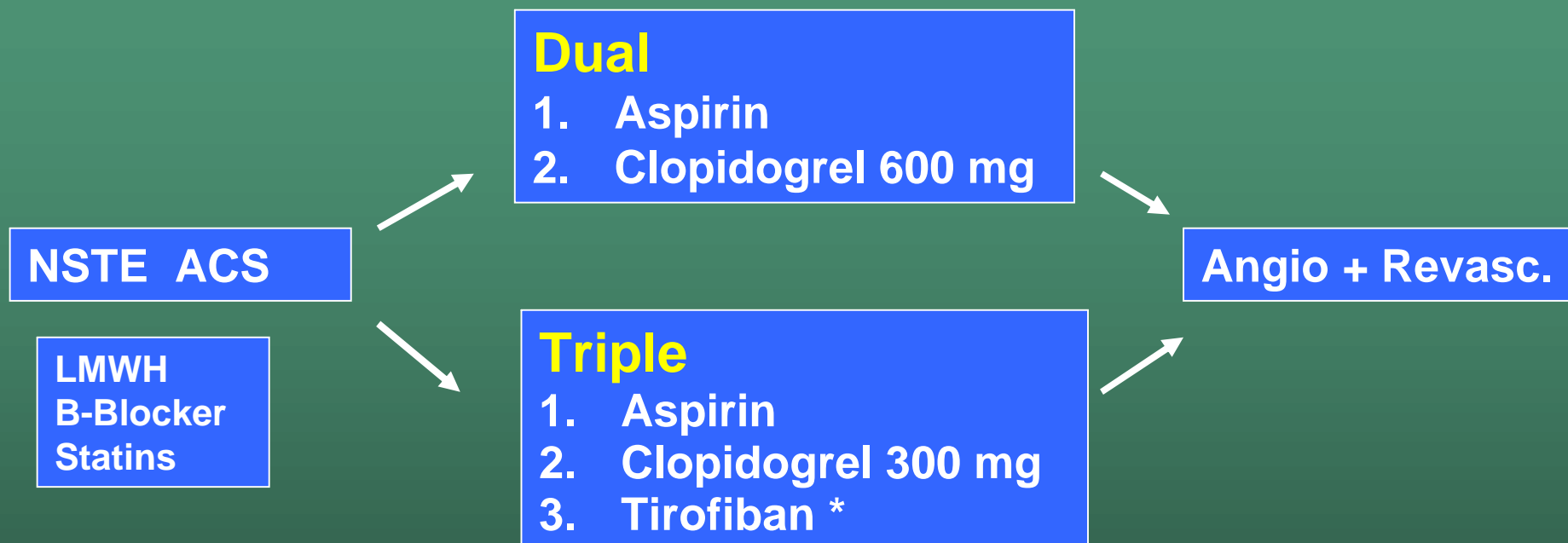
and one of the following

- Abnormal ECG:
  - ST-depr > 0.1 mV in 2 leads
  - Transient ST elevation (<30 minutes)
- Positive biomarkers (Troponin T > 0.05 ng/ml or CK-MB ↑)

# Exclusion criteria

- Age > 80 years
- Persistent ST elevation
- Cardiogenic shock
- Ischemia due to a non-cardiac condition
- PCI within previous 6 months
- Renal failure
- Contra-indications for GP IIb/IIIa inhibitor

# Study design



\* 10 microgr/kg bolus, 0.15 microgr/kg/min maintenance



# Endpoints

## Primary

Enzymatic infarct size

- LDHQ<sub>48</sub>
- Peak CK

## Secondary

Initial TIMI flow of the culprit vessel

# Sample size calculation

## Based on ELISA-1 Trial

Assumption that LDHQ<sub>48</sub> is reduced from 500 to 350 IU/L

SD: 500 IU/L

Power: 80%

$\alpha$ : 0.05

N = 330

# Baseline characteristics

	Dual N = 166	Triple N = 162
Age (yrs, mean, SD)	65 ± 10	62 ± 11
Females	28%	30%
Diabetes	20%	15%
Hypertension	51%	46%
Hyperlipidemia	34%	39%
Current smoking	44%	40%
Prior MI	20%	22%
Admission-Angio (hrs, mean, SD)	26 ± 24	30 ± 42
Troponin > 0.05 ng/ml	84%	77%
ST depression > 0.1 mV	61%	62%

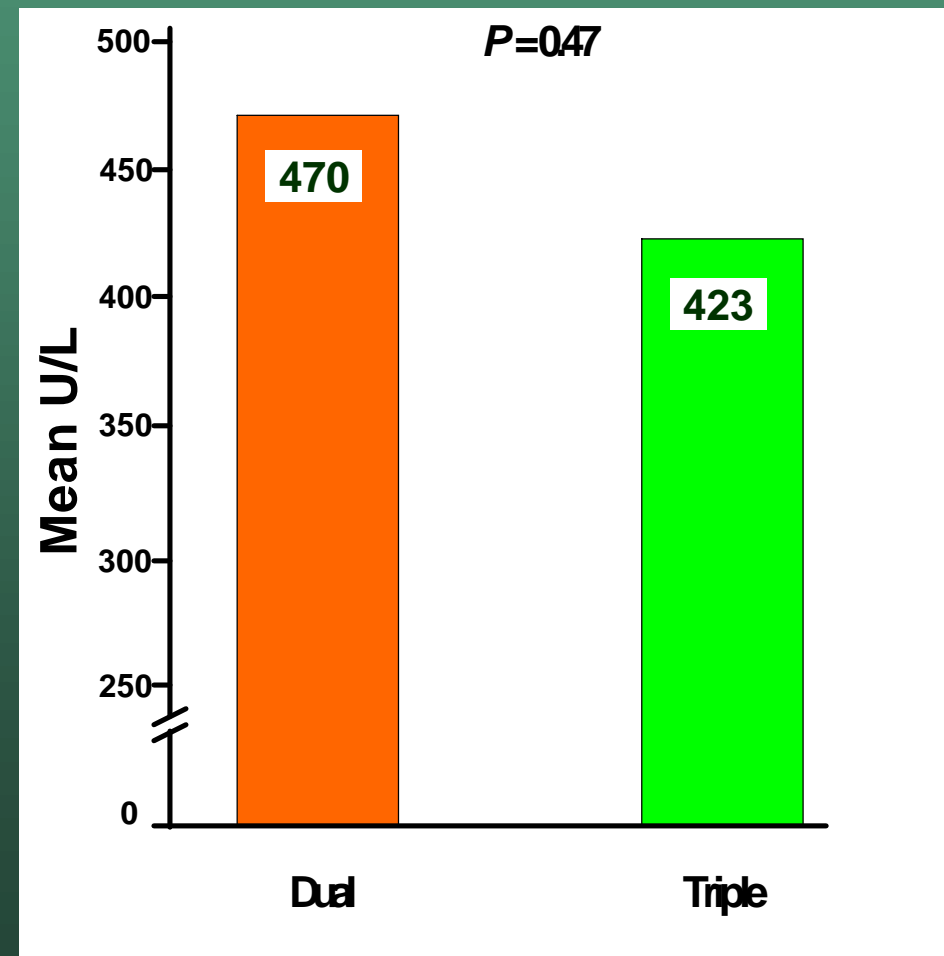
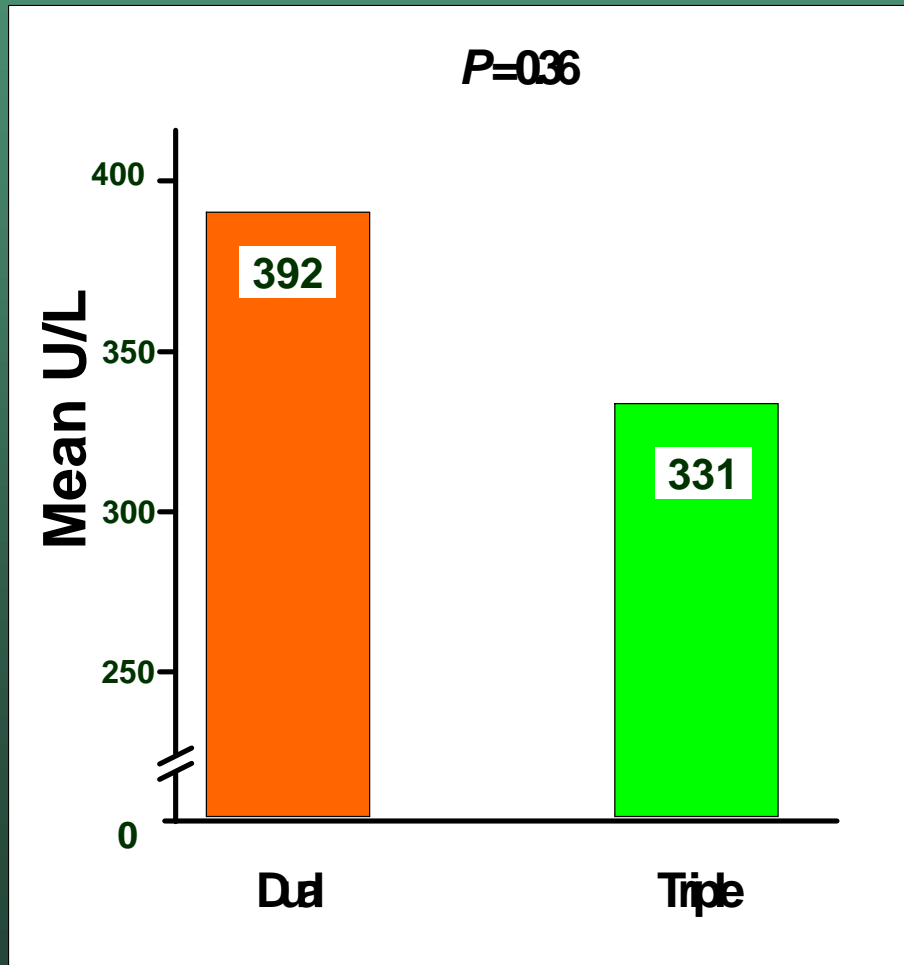
# Angiography and Revascularization

	Dual N = 166	Triple N = 162	P-value
Angiography	98%	99%	
<b>Revascularization</b>			
PCI	62%	56%	0.30
CABG	15%	18%	0.60
Conservative	13%	12%	0.78
No CAD	10%	14%	0.23

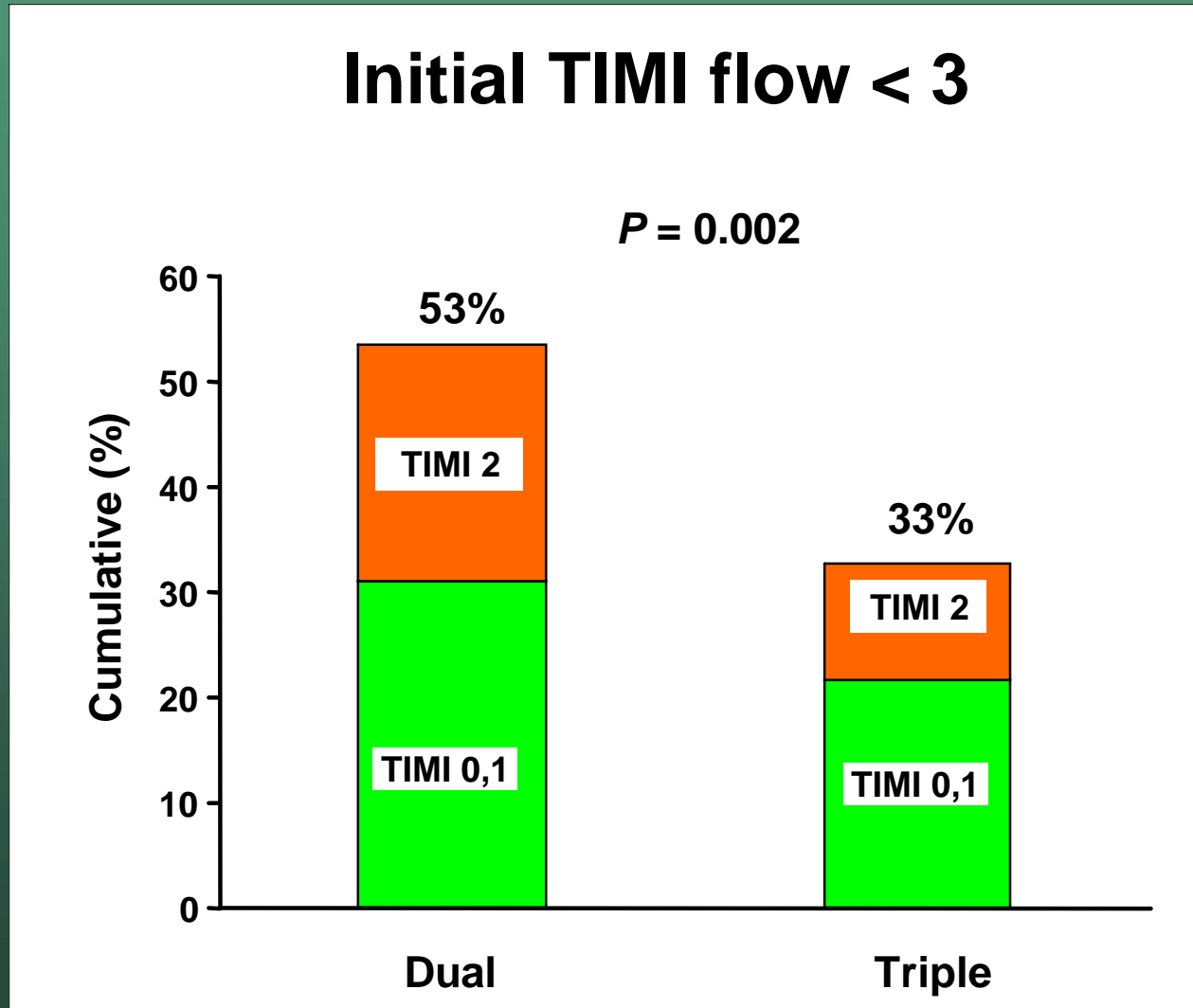
# Primary Endpoint

LDHQ<sub>48</sub>

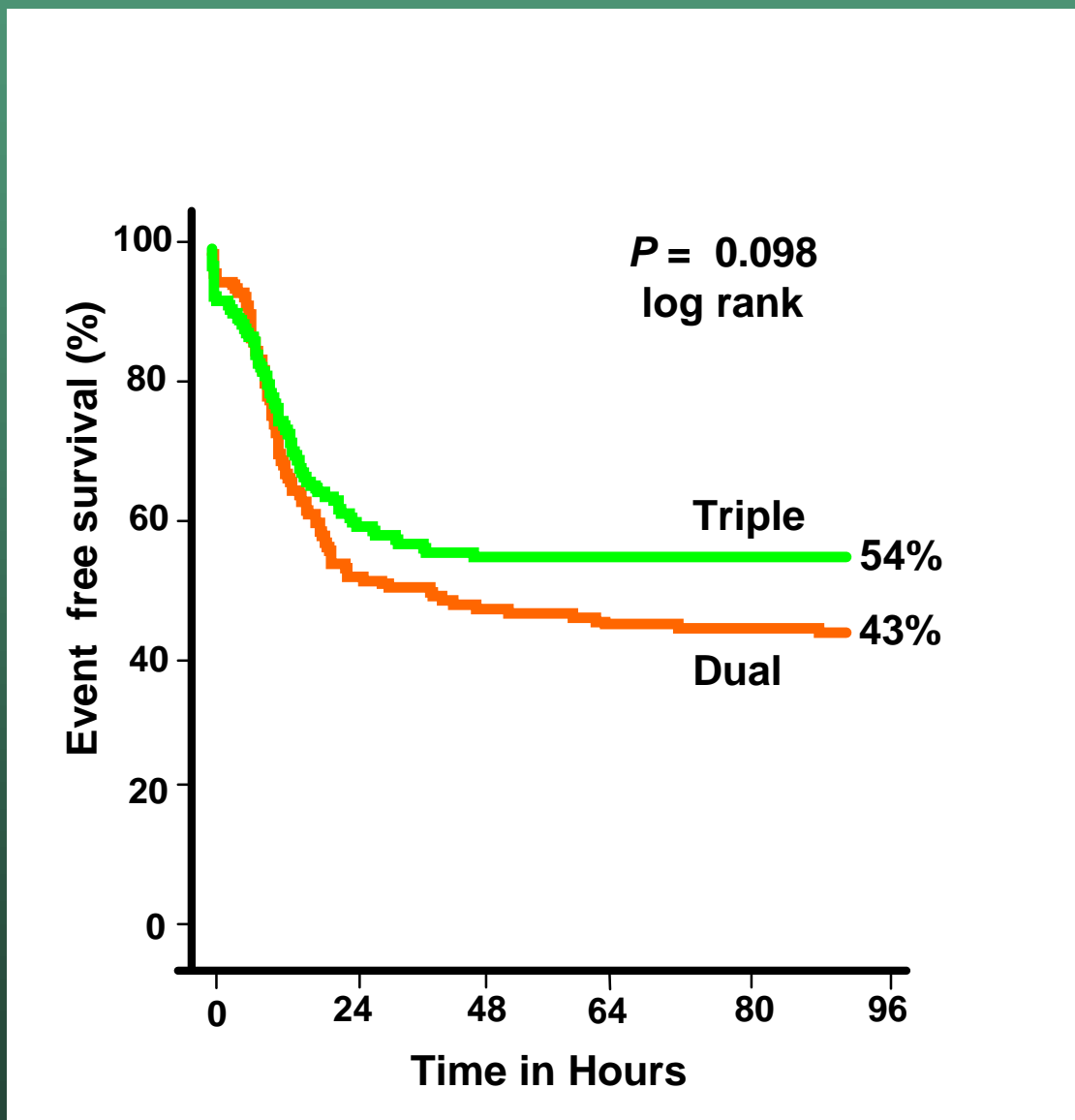
Peak CK



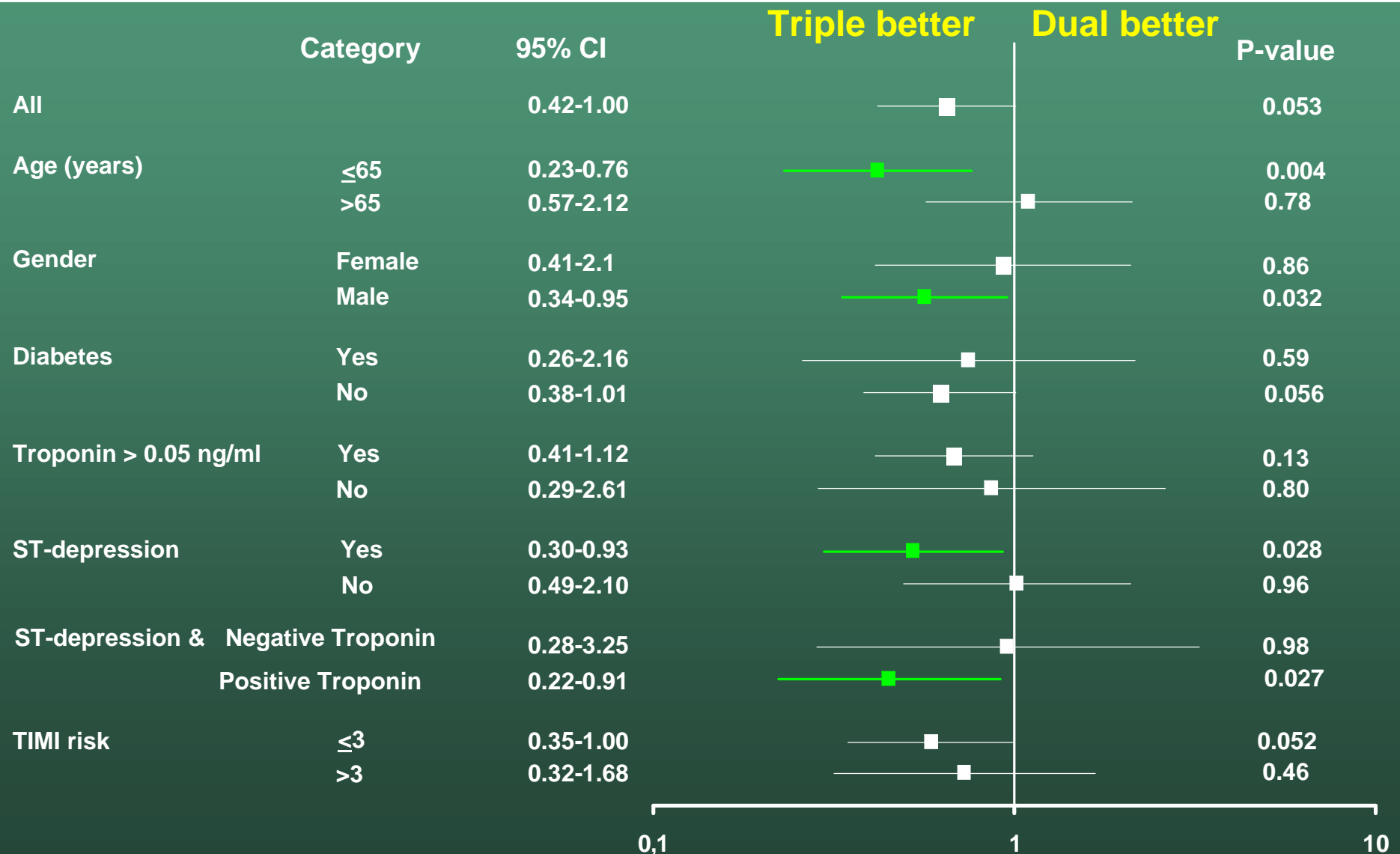
# Secondary Endpoint



# Freedom of death or MI



# Odds ratio of 30 day event free



# 30-day outcome

	Dual N=163	Triple N=162	P-value
Death	1%	1%	1.0
MI	56%	46%	0.052
Stroke	0%	0%	
Bleeding	10%	12%	0.5
CABG related (%)	6%	9%	0.9

# Conclusion (1)

**ELISA-2 : Triple vs. Dual** antiplatelet pre-treatment:

- No significant difference in enzymatic infarct size
- Better initial perfusion (TIMI 3 flow) of the culprit vessel
- Trend towards better event free survival

## Conclusion (2)

**This study was underpowered because enzymatic infarct size was smaller than expected**

**Future large scale studies should be performed to show whether the differences in favour of triple antiplatelet therapy are real or based on chance**

# Acknowledgment

## Zwolle MI group

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A.W.J. van 't Hof, J.C.A. Hoorntje, J.P. Ottervanger,  
H. Suryapranata, F. Zijlstra.

## Residents cardiology

Diagram  Diagnostic research and management