

# TAILORED CLOPIDOGREL LOADING DOSE ACCORDING TO PLATELET REACTIVITY MONITORING DECREASE EARLY STENT THROMBOSIS

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# DESIGN

Non-emergent PCI : ACS and Stable angina (n= 1122)

*Loading dose (LD) -ASA 250mg -  
Clopidogrel 600mg*



VASP  $\geq$  50%

Randomization  
(n=429)

CONTROL (n =215)

VASP-guided LD (n =214)

*Maintenance dose -ASA 160 mg  
-Clopidogrel 75 mg*

Up-to 3 additional LD of 600 mg every 24 hours until VASP < 50% before PCI

**1° endpoint: Definite stent thrombosis (ARC definition)**

**2° endpoints: MACE including CV death, MI and U-TVR  
TIMI major and minor bleeding at 30 days**

# Platelet reactivity monitoring

VASP after first LD

$66 \pm 11$

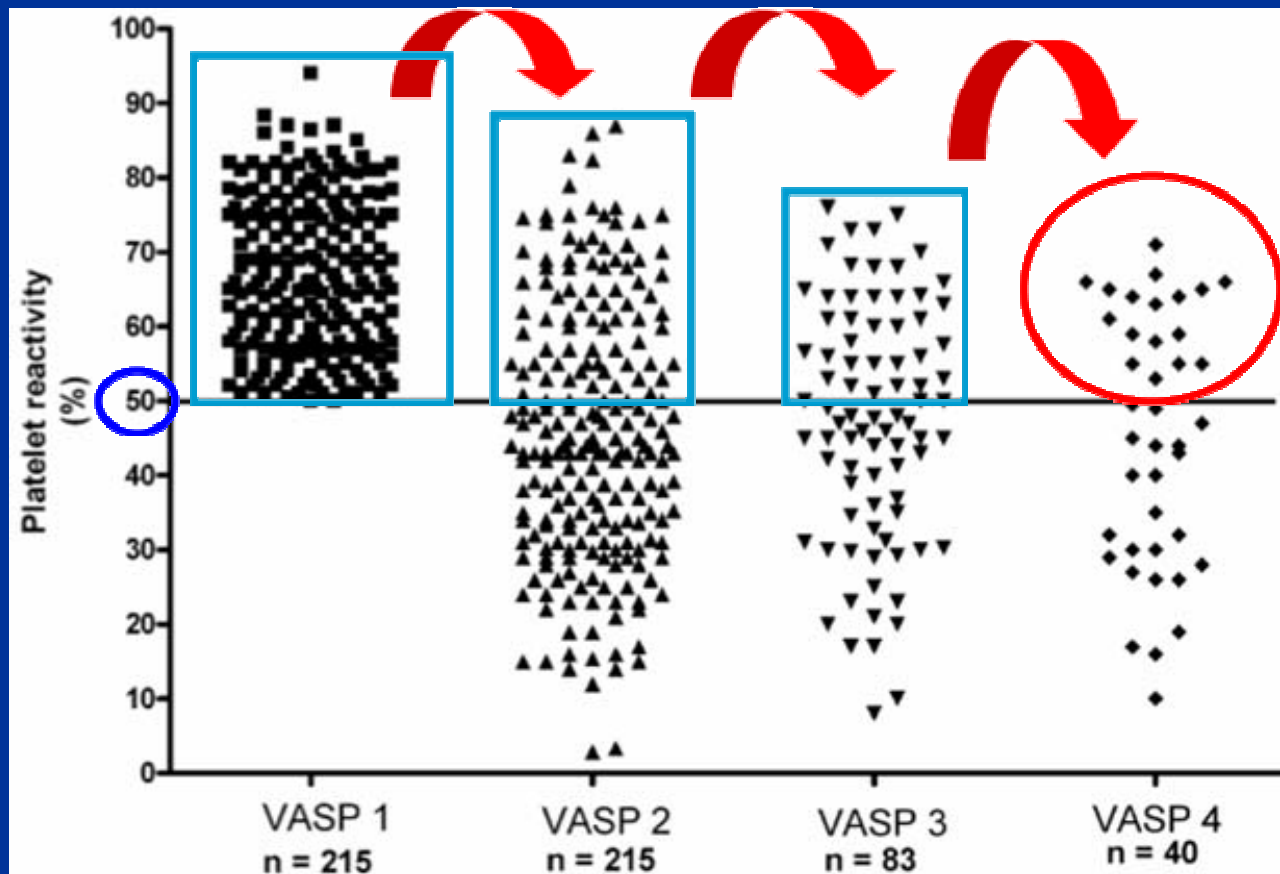
$67 \pm 10$

VASP after sensitization

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$37 \pm 12^\dagger$

$\dagger p < 0.01$



17 patients  
(8%)

# Early definite stent thrombosis during one month follow-up.

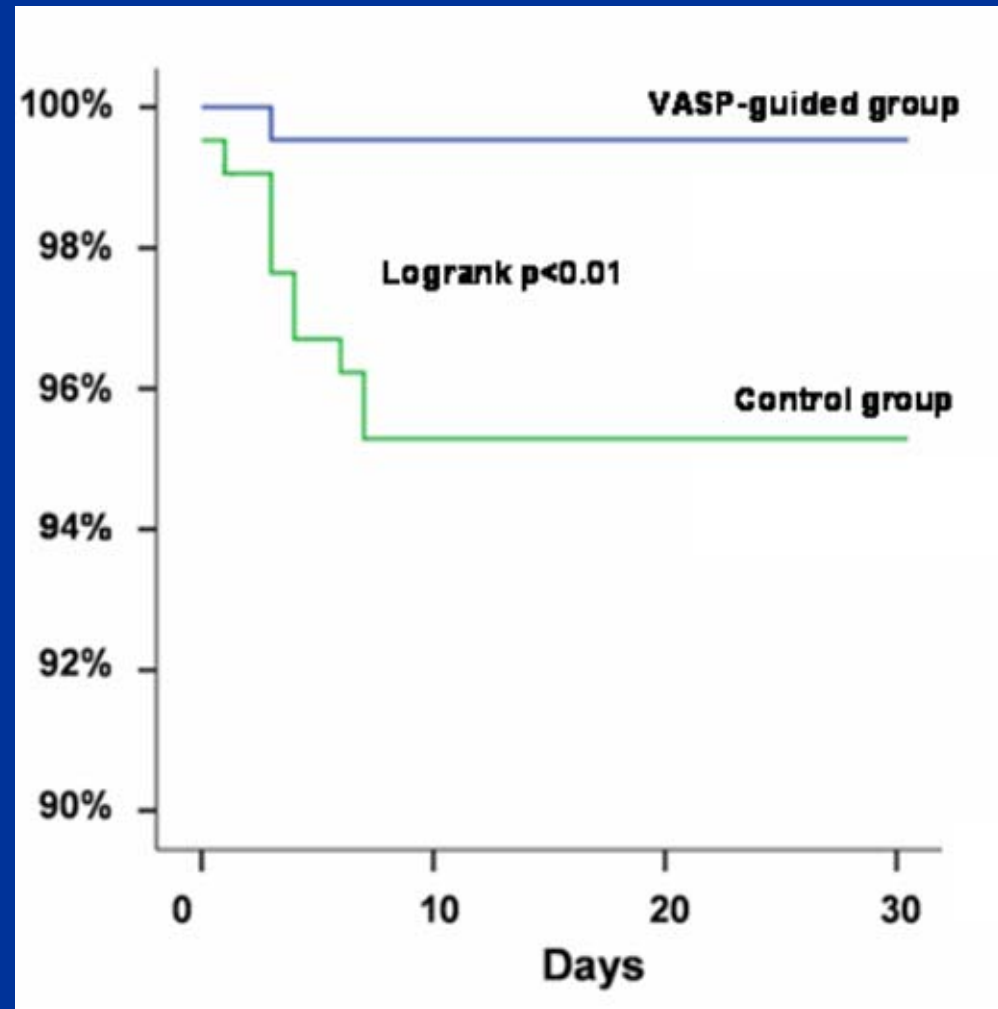
Endpoint n, (%)	Control group (n= 214)	VASP-guided group (n= 215)	p
Acute stent thrombosis	2 (0.9)	0	0.25
Sub-acute stent thrombosis	8 (3.7)	1 (0.5)	0.02
Early DST	10 (4.7)	1 (0.5)	0.01

-2 patients presented recurrent sub acute stent thrombosis (2 recurrences for each, 1 in the control group and 1 in the VASP guided group).

-GP IIb/IIIa inhibitor were used in half of patients presenting with early stent thrombosis.

# Timing of early stent thrombosis

All early stent thrombosis occurred during the first 7 days



# Secondary end-point: MACE

Endpoint n, (%)	Control (n= 214)	VASP-guided (n= 215)	p
Cardiovascular death	4 (1.8)	0	0.06
Myocardial infarction	10 (4.8)	1 (0.5)	0.01
Urgent revascularization	5 (2.3)	0	0.06
All MACE	19 (8.9)	1 (0.5)	< 0.001

# Secondary end-point: TIMI bleeding

	Control (n= 214)	VASP-guided (n= 215)	p
Major bleeding	2 (0.9)	2 (0.9)	1
Minor bleeding	4 (1.9)	6 (2.8)	0.8
All	6 (2.8)	8 (3.7)	0.8

No difference in bleeding complication between the 2 groups  
No intra-cerebral bleeding, no fatal bleeding  
Majority of patients had PCI through the radial access (55.6%)

# CONCLUSION 1

- Adjusted LD of clopidogrel according to PR monitoring decrease the rate of stent thrombosis at 30 days in patients with clopidogrel low-response without increasing bleedings.



# CONCLUSION 2

- Patients could be divided in 3 groups according to VASP index:
  - Good-responders: VASP < 50 % after a first bolus of 600 mg of clopidogrel (55%)
  - Low-responders: VASP > 50 % after the first bolus but could be sensitized with up-to three additional LD (37%)
  - Resistant: VASP > 50 % despite up-to 2400 mg of clopidogrel (8%)

# CONCLUSION 3

- Paradigm shift ?
  - Therapeutic window for anti platelet therapy in patients undergoing PCI to prevent ischemic events without increasing bleedings is emerging and support the need for platelet reactivity monitoring.