

# 11° CONGRESSO NAZIONALE



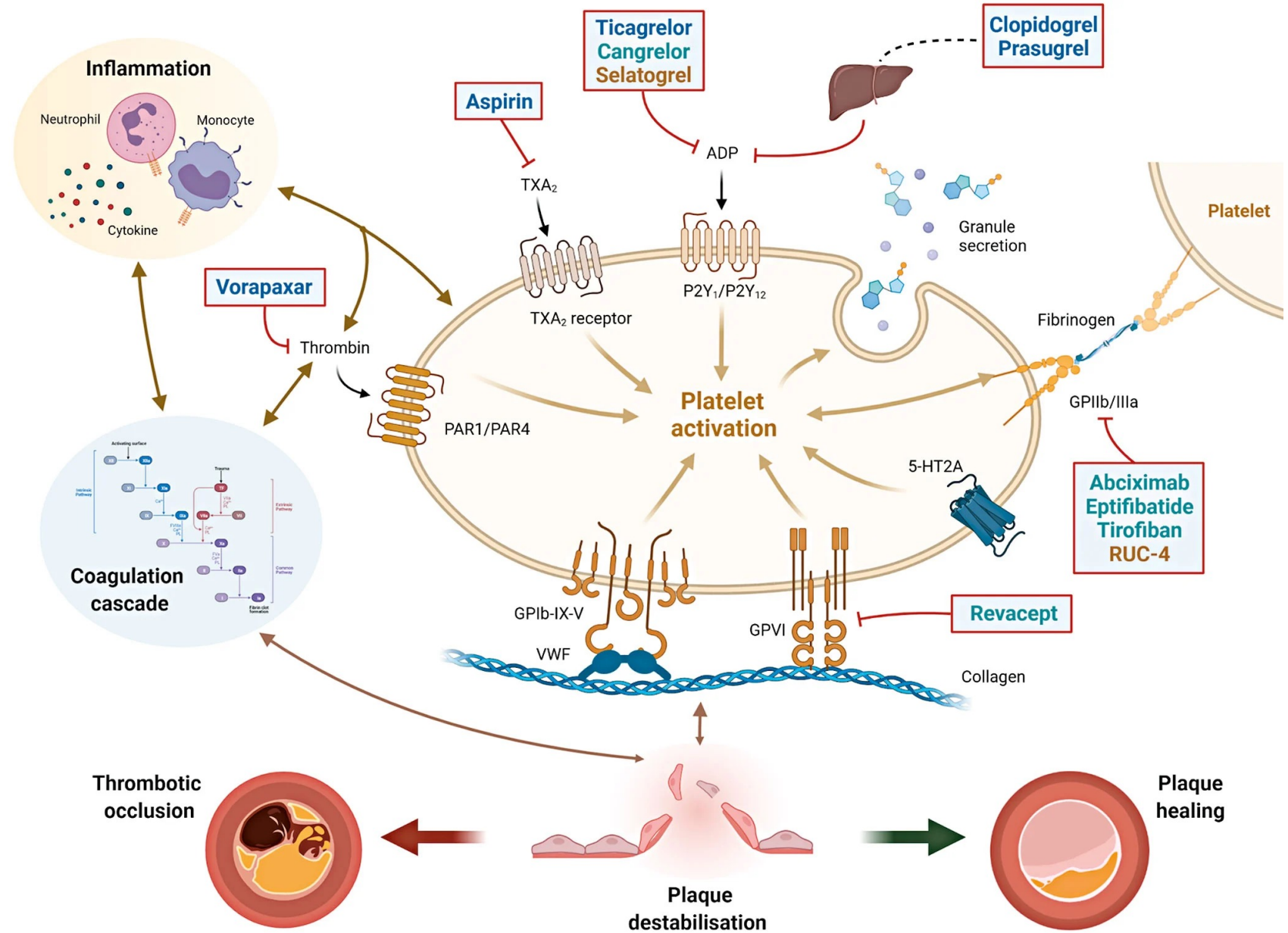
*Quello che le Linee  
Guida Non Dicono*

**Napoli**  
**5-6 aprile 2024**

**Antiaggreganti piastrinici per via endovenosa: Update 2024**

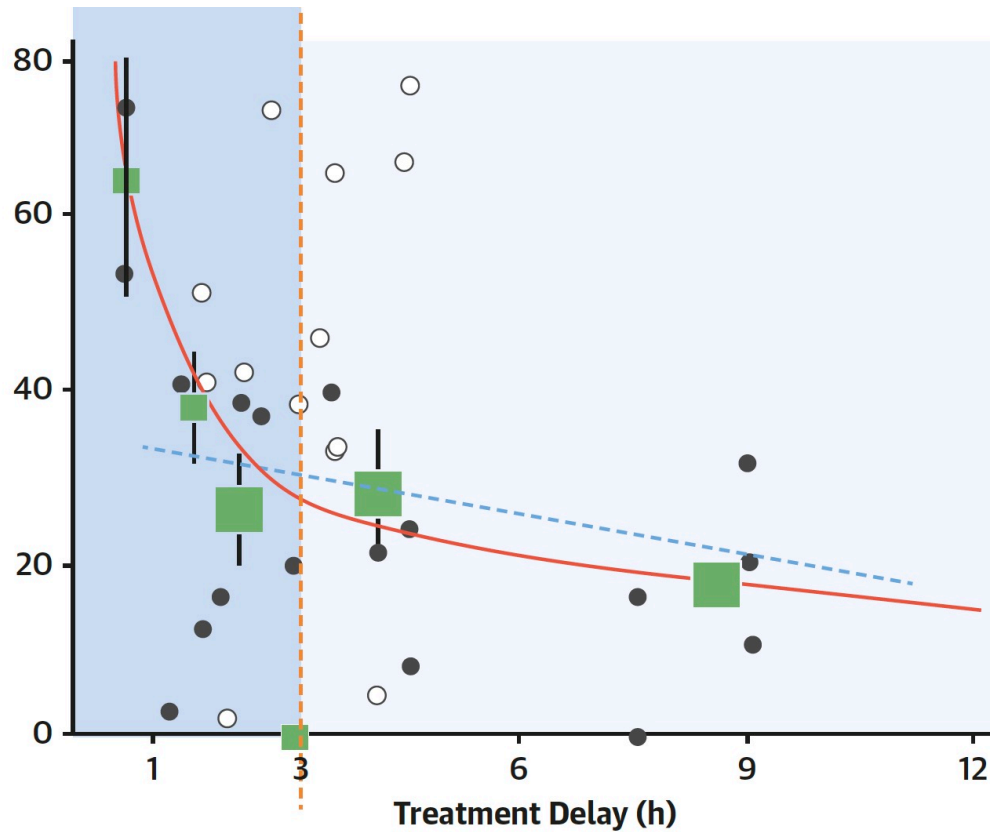
Raffaele Piccolo, MD PhD  
Professore Associato  
Università degli Studi di Napoli Federico II

# Antithrombotic Therapy in Patients with Coronary Artery Disease

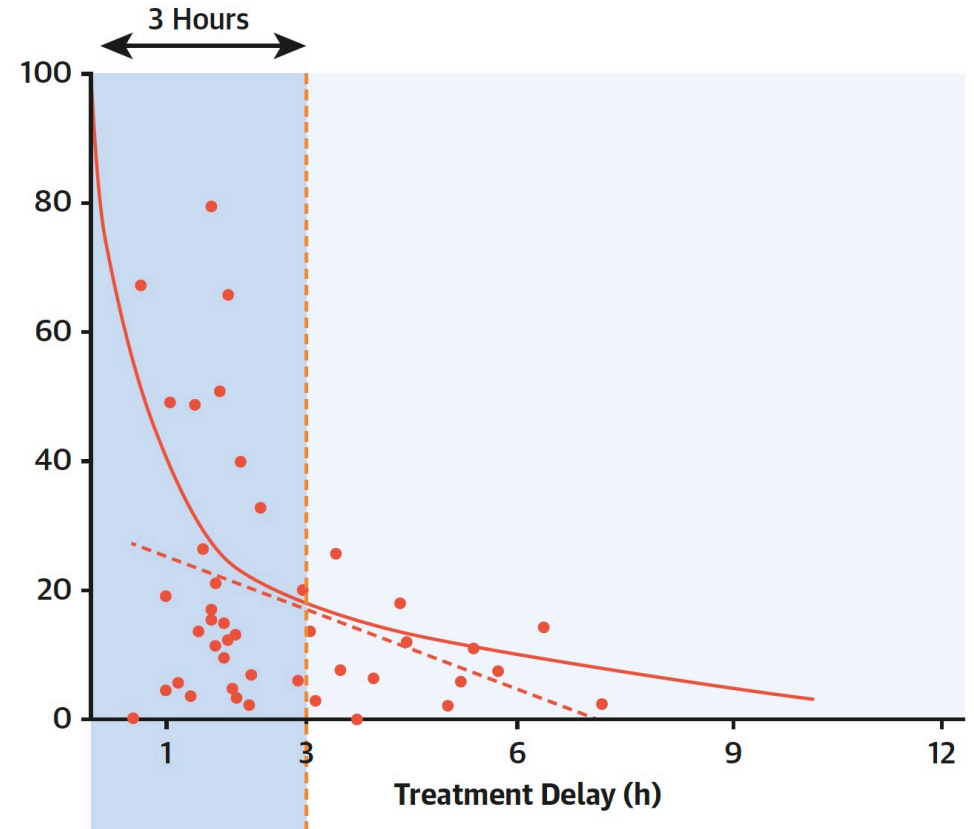


# Reperfusion Therapy and Thrombus Composition during STEMI

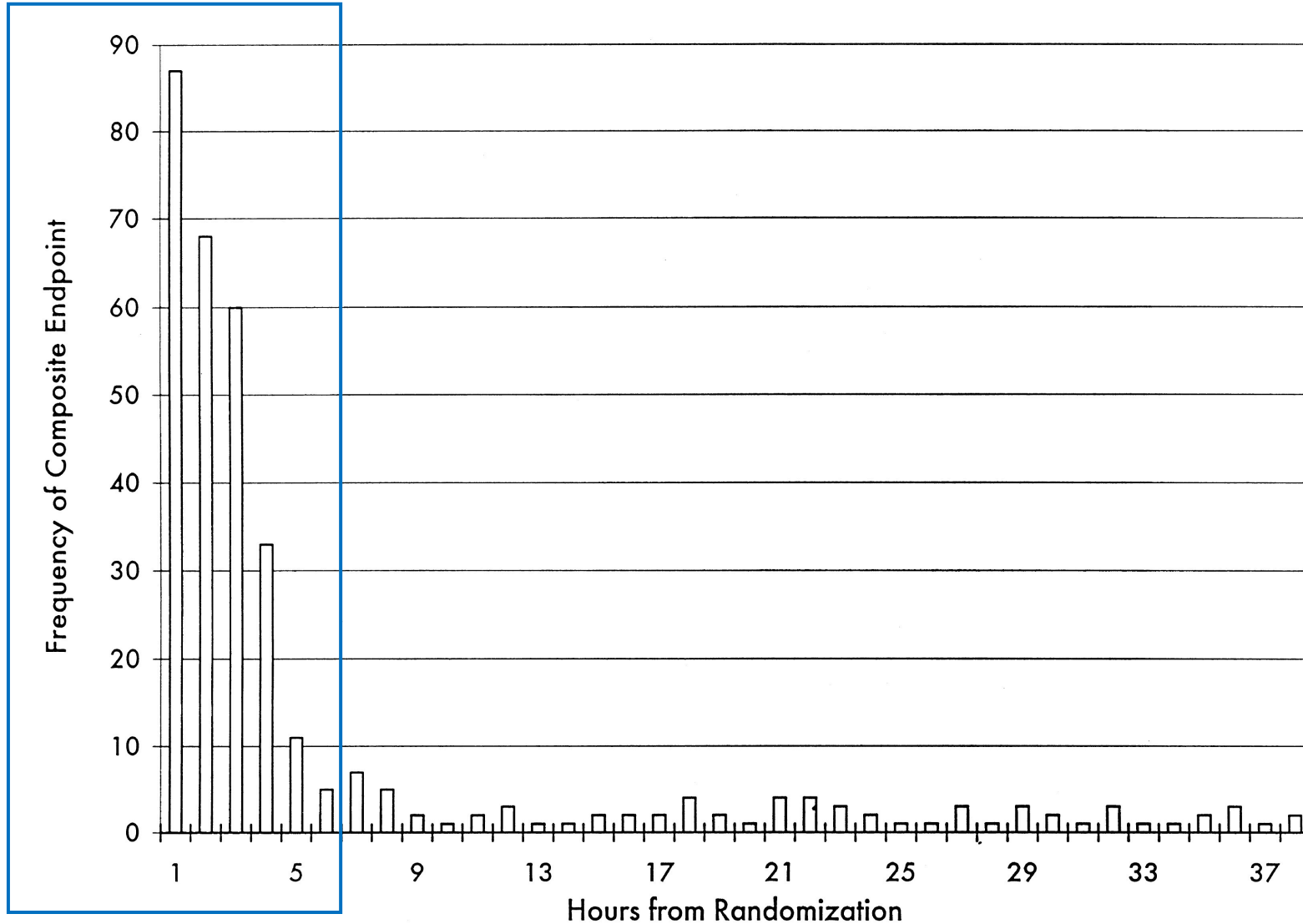
## Mortality Benefit per 1,000 Treated Patients



## Platelet Content in Coronary Thrombus (%)



# Time Course of Ischemic Complications after PCI



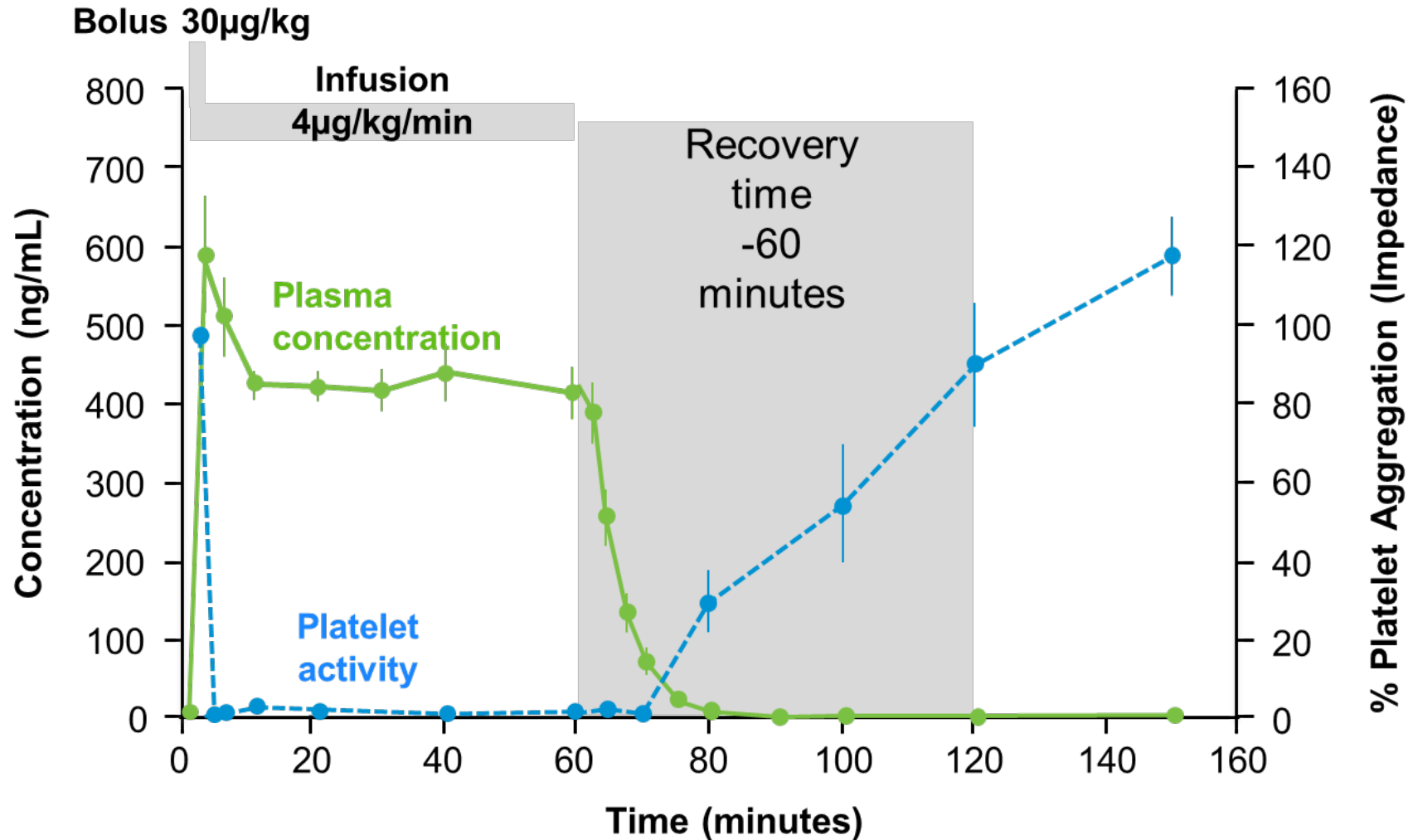
**66% of  
Ischemic  
events occur  
within 6 h after  
PCI**

# Intravenous Antiplatelet Agents: 2023 ESC Guidelines for the Management of ACS

GP IIb/IIIa receptor antagonists should be considered if there is evidence of no-reflow or a thrombotic complication during PCI.	<b>IIa</b>	<b>C</b>
In P2Y <sub>12</sub> receptor inhibitor-naïve patients undergoing PCI, cangrelor may be considered. <sup>251–254</sup>	<b>IIb</b>	<b>A</b>

Byrne R. et al. Eur Heart J 2023;44:3720-3826

# Phase I Human PK/PD Rationale for Cangrelor Use

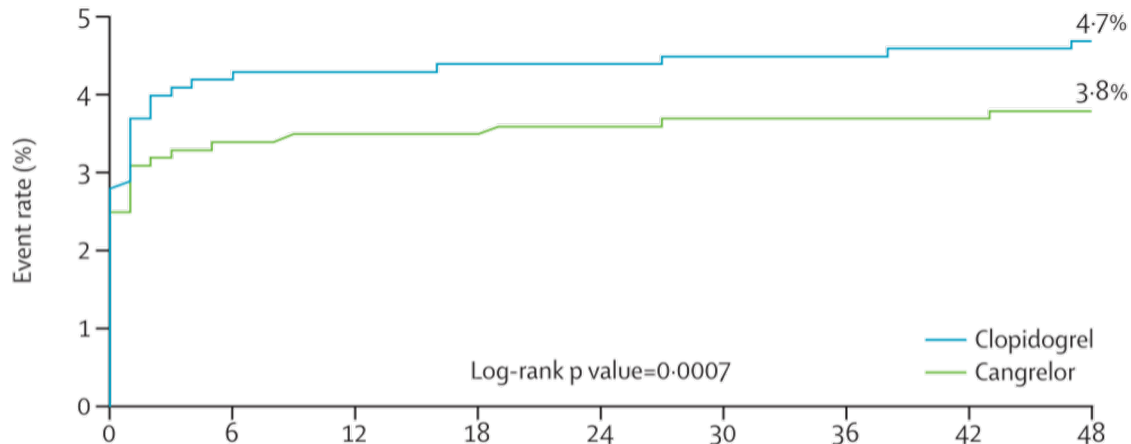




# Effect of Cangrelor on Periprocedural Outcomes: A pooled analysis of patient-level data

**3 RCTs (N=24,910 – CHAMPION PCI/PLATFORM/PHOENIX)  
11.6% STEMI, NSTEMI-ACS 57.4%, SCAD 31%**

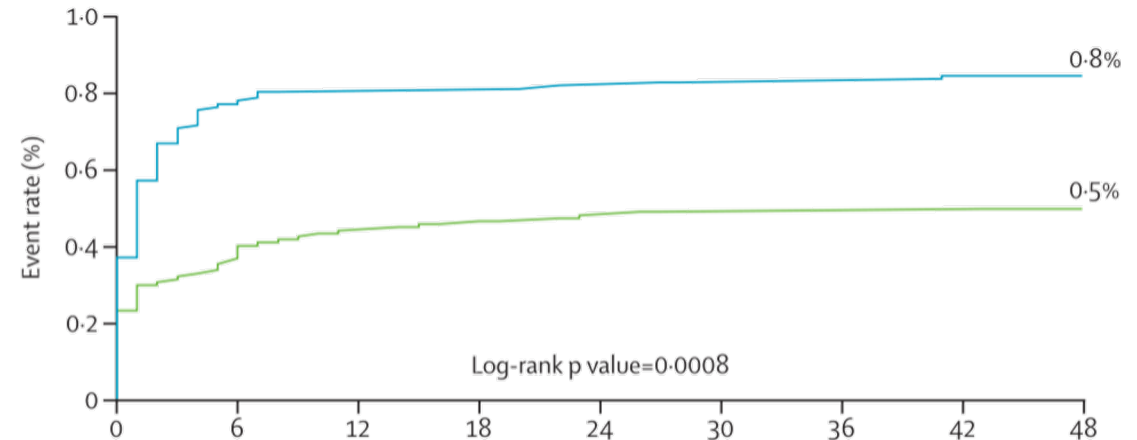
## Death, MI, Revasc, or ST at 48 hours



Number at risk		0	6	12	18	24	30	36	42	48
Cangrelor	12475	12053	12040	12033	12021	12006	12002	11994	11985	
Clopidogrel	12435	11903	11897	11891	11882	11874	11866	11853	11843	

**OR=0.81, 95%CI 0.71-0.91**  
**At 30 days: 5.3% vs. 6.1%, P=0.001**

## Stent Thrombosis at 48 hours

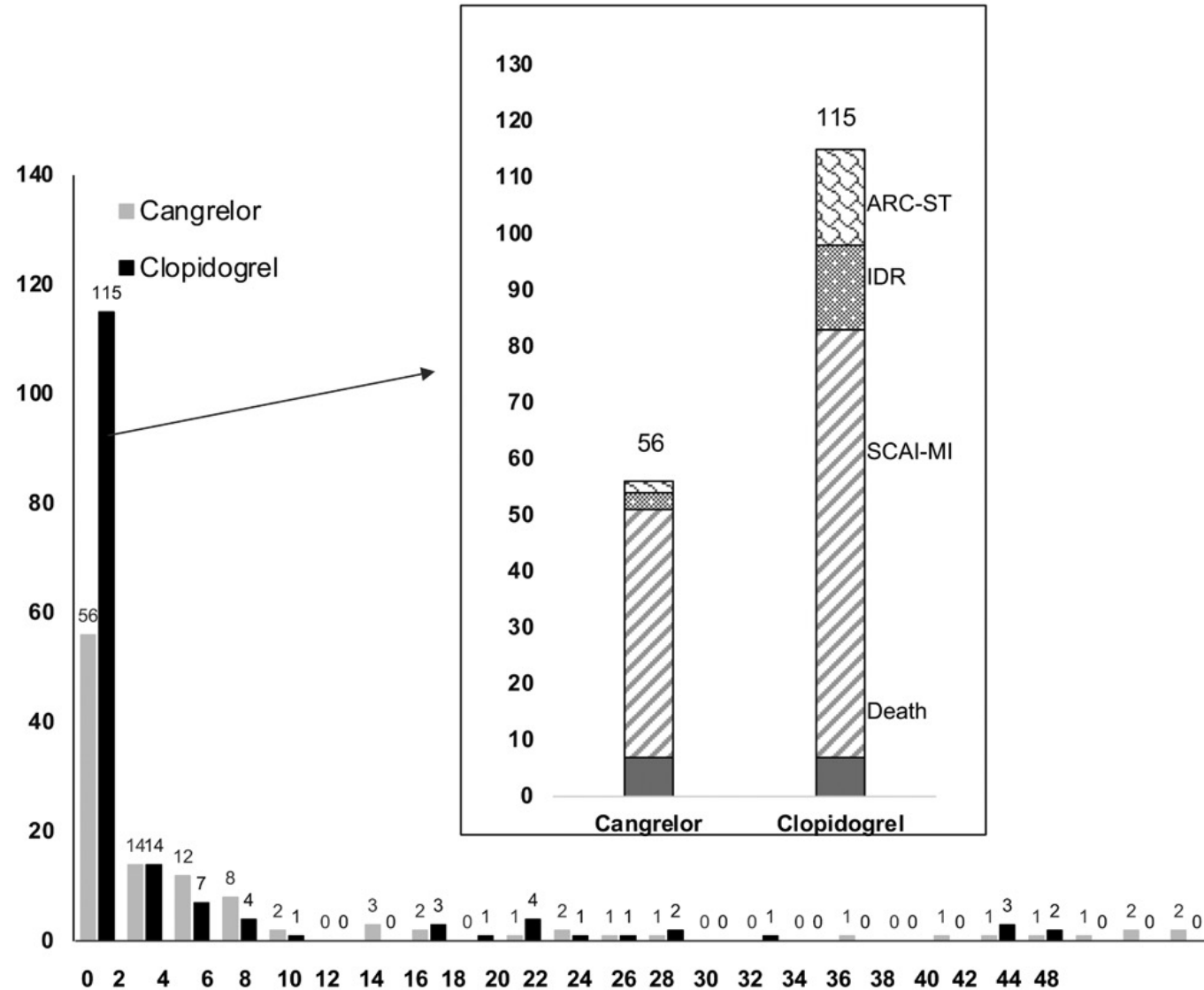


Number at risk		0	6	12	18	24	30	36	42	48
Cangrelor	12475	12420	12406	12403	12395	12387	12384	11377	12371	
Clopidogrel	12435	12327	12319	12318	12308	12306	11304	12297	12291	

**OR=0.59, 95%CI 0.43-0.80**  
**At 30 days: 0.9% vs. 1.3%, P=0.003**

# Efficacy Outcomes at 2-hours after PCI

(N=10,942 – CHAMPION PHOENIX)



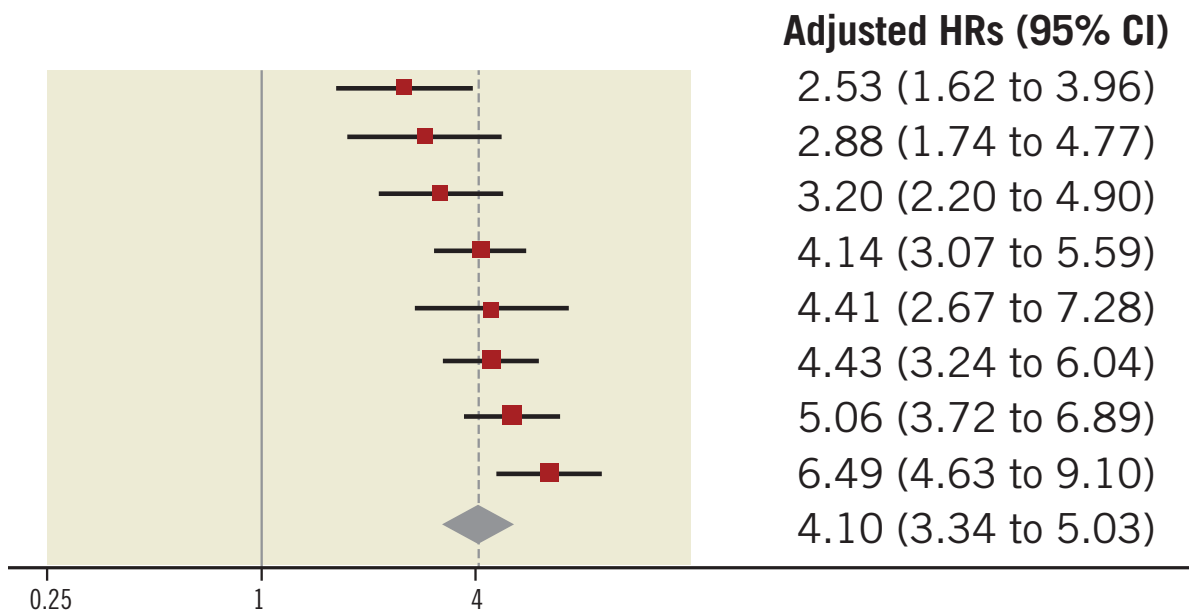


# Safety Outcomes with Cangrelor

Bleeding	Cangrelor (N=12,565)	Clopidogrel (N=12,542)	OR (95% CI)	P-value
GUSTO Severe	28 (0.2%)	23 (0.2%)	1.22 (0.70, 2.11)	0.49
GUSTO Moderate	76 (0.6%)	56 (0.4%)	1.36 (0.96, 1.92)	0.08
GUSTO Severe + Moderate	103 (0.8%)	79 (0.6%)	1.30 (0.97, 1.75)	0.08
TIMI Major	32 (0.3%)	28 (0.2%)	1.14 (0.69, 1.90)	0.61
<b>TIMI Minor</b>	<b>77 (0.6%)</b>	<b>51 (0.4%)</b>	<b>1.51 (1.06, 2.15)</b>	<b>0.02</b>
<b>TIMI Major + Minor</b>	<b>109 (0.9%)</b>	<b>79 (0.6%)</b>	<b>1.38 (1.03, 1.85)</b>	<b>0.03</b>
Any blood transfusion	90 (0.7%)	70 (0.6%)	1.29 (0.94, 1.76)	0.11
<b>ACUITY Major</b>	<b>534 (4.2%)</b>	<b>353 (2.8%)</b>	<b>1.53 (1.34, 1.76)</b>	<b>&lt;0.0001</b>
<b>ACUITY w/out hematoma</b>	<b>169 (1.3%)</b>	<b>123 (1.0%)</b>	<b>1.38 (1.09, 1.74)</b>	<b>0.007</b>

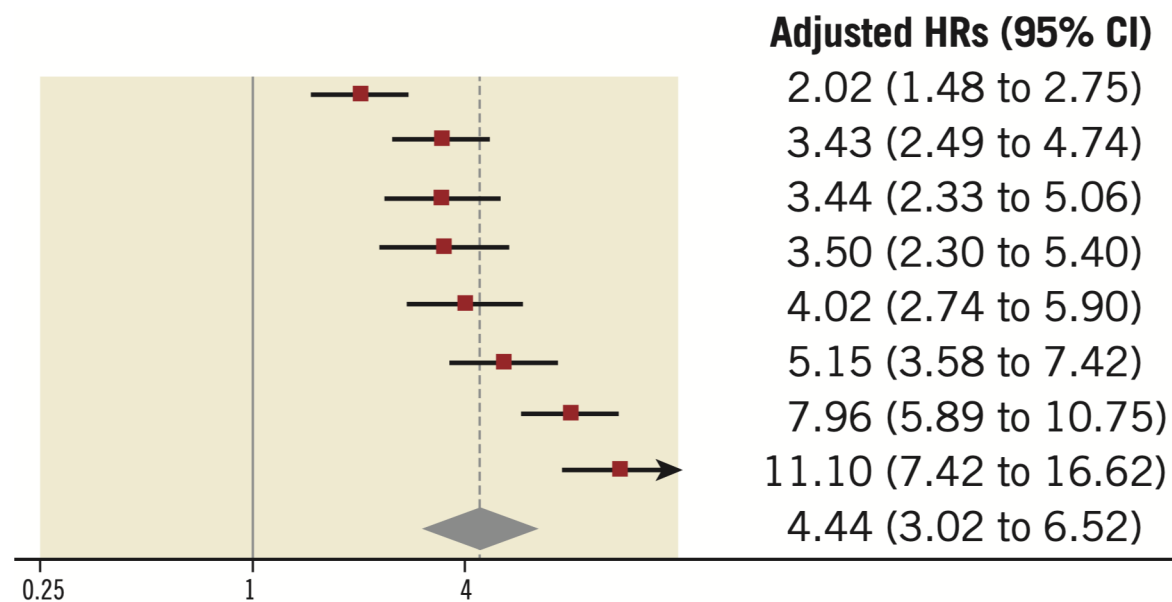
# Prognostic Implications of Ischemic and Bleeding Complications

## Risk of Death After Myocardial Infarction



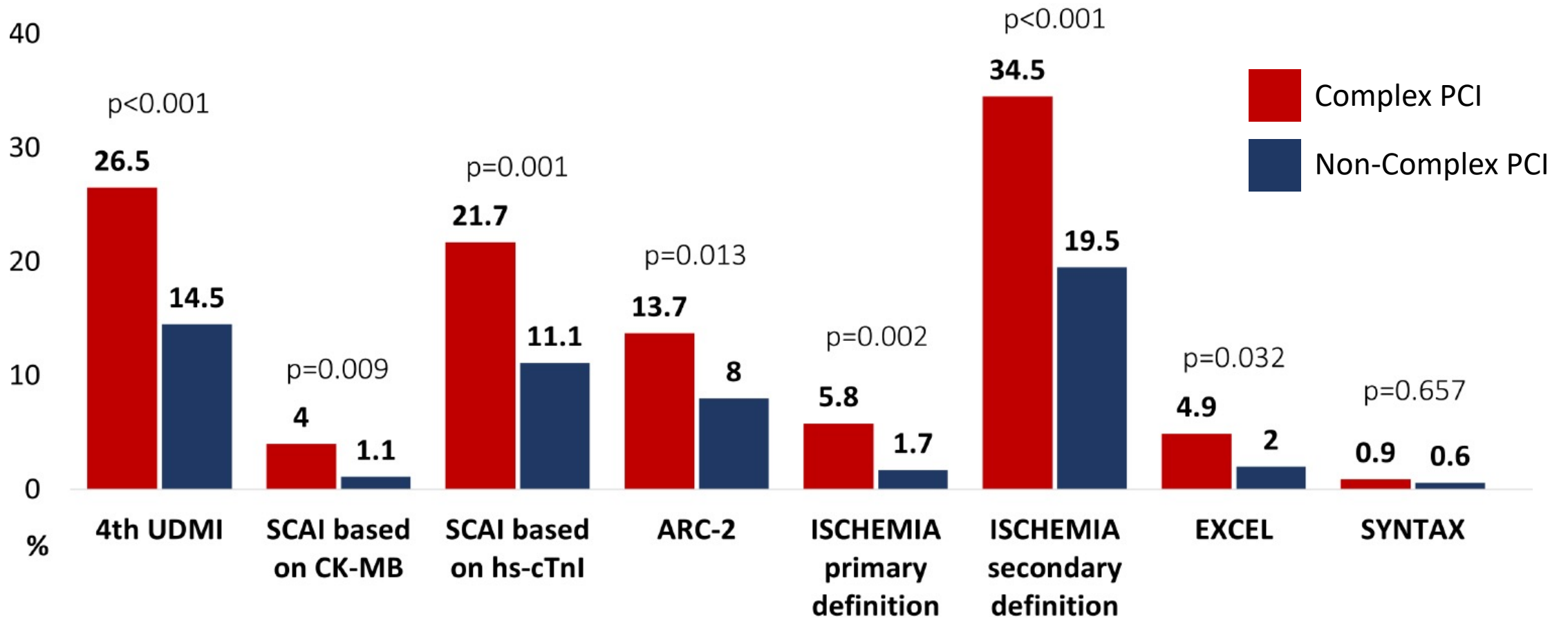
**HR 4.10**  
**(95%CI 3.34 to 5.03)**

## Risk of Death After Major Bleeding



**HR 4.44**  
**(95%CI 3.02 to 6.52)**

# Periprocedural Myocardial Infarction in Complex PCI





# Short-Term Antiplatelet Therapy for Complex PCI Patients: Cangrelor

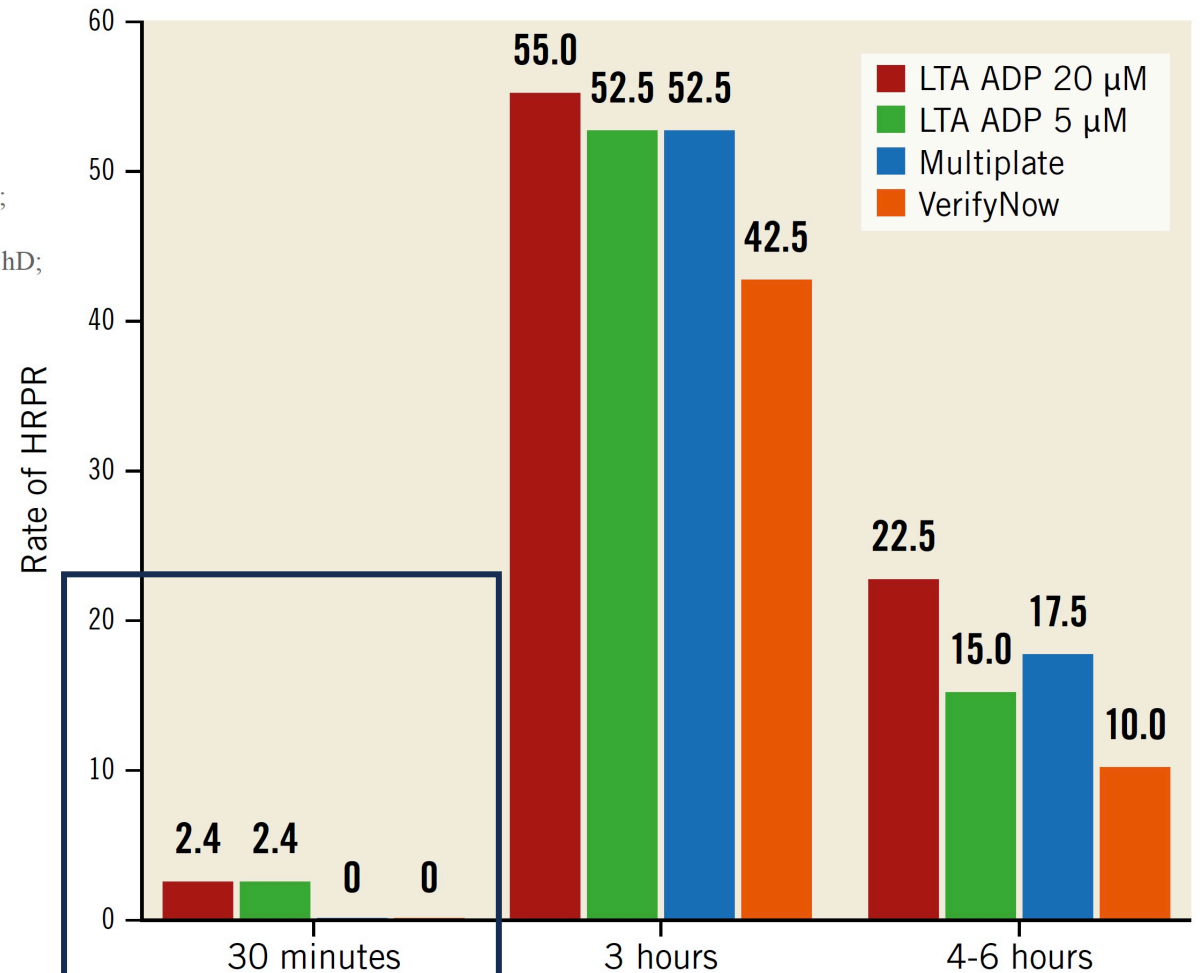
## Pharmacodynamic effects of cangrelor in elective complex PCI: insights from the POMPEII Registry

Giuseppe Gargiulo<sup>1\*</sup>, MD, PhD; Alessandra Marenga<sup>1</sup>, PhD; Luca Sperandio<sup>1</sup>, MD; Lina Manzi<sup>1</sup>, MD; Marisa Avvedimento<sup>1</sup>, MD; Fiorenzo Simonetti<sup>1</sup>, MD; Mario Enrico Canonico<sup>1</sup>, MD; Roberta Paolillo<sup>1</sup>, PhD; Alessandra Spinelli<sup>1</sup>, BSc; Francesco Borgia<sup>1</sup>, MD, PhD; Luigi Diserafino<sup>1</sup>, MD, PhD; Anna Franzone<sup>1</sup>, MD, PhD; Eugenio Stabile<sup>2</sup>, MD, PhD; Raffaele Piccolo<sup>1</sup>, MD, PhD; Plinio Cirillo<sup>1</sup>, MD, PhD; Marco Valgimigli<sup>3</sup>, MD, PhD; Giovanni Esposito<sup>1</sup>, MD, PhD

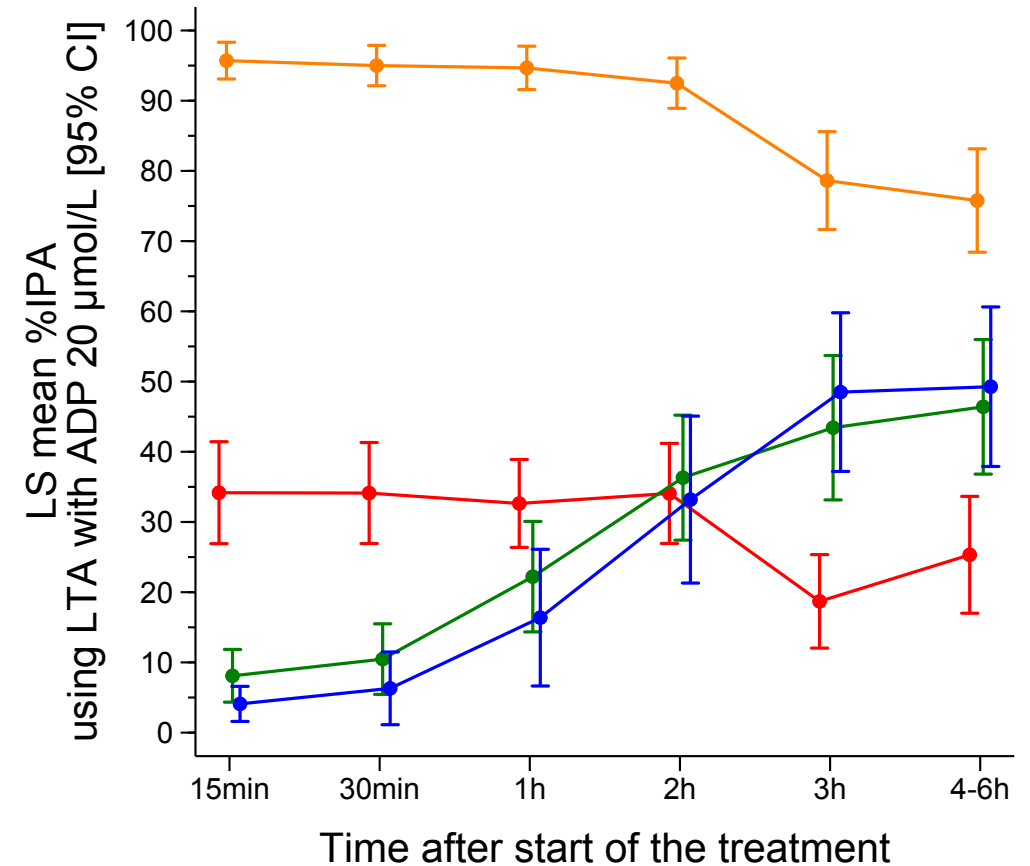
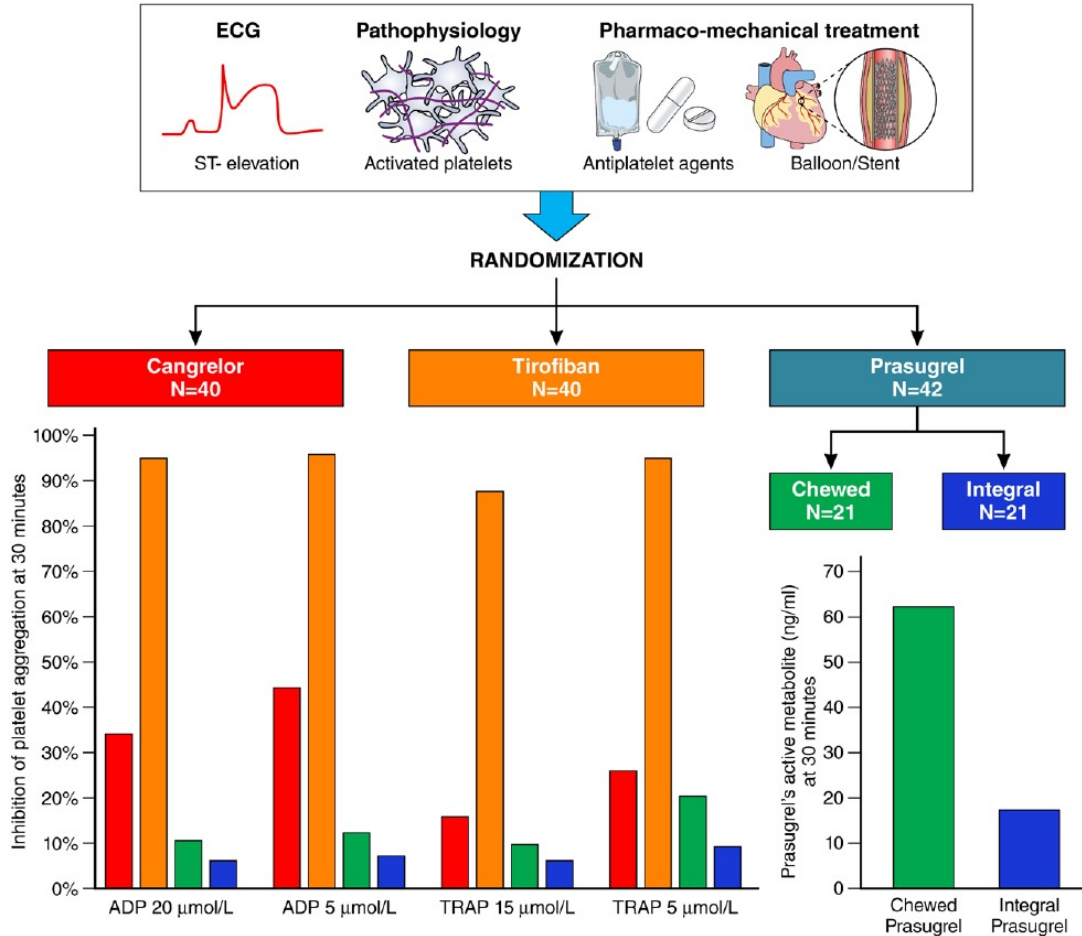
## 70 Patients undergoing Complex PCI

EuroIntervention. 2023 Mar  
20;18(15):1266-1268

High residual platelet reactivity (HRPR)

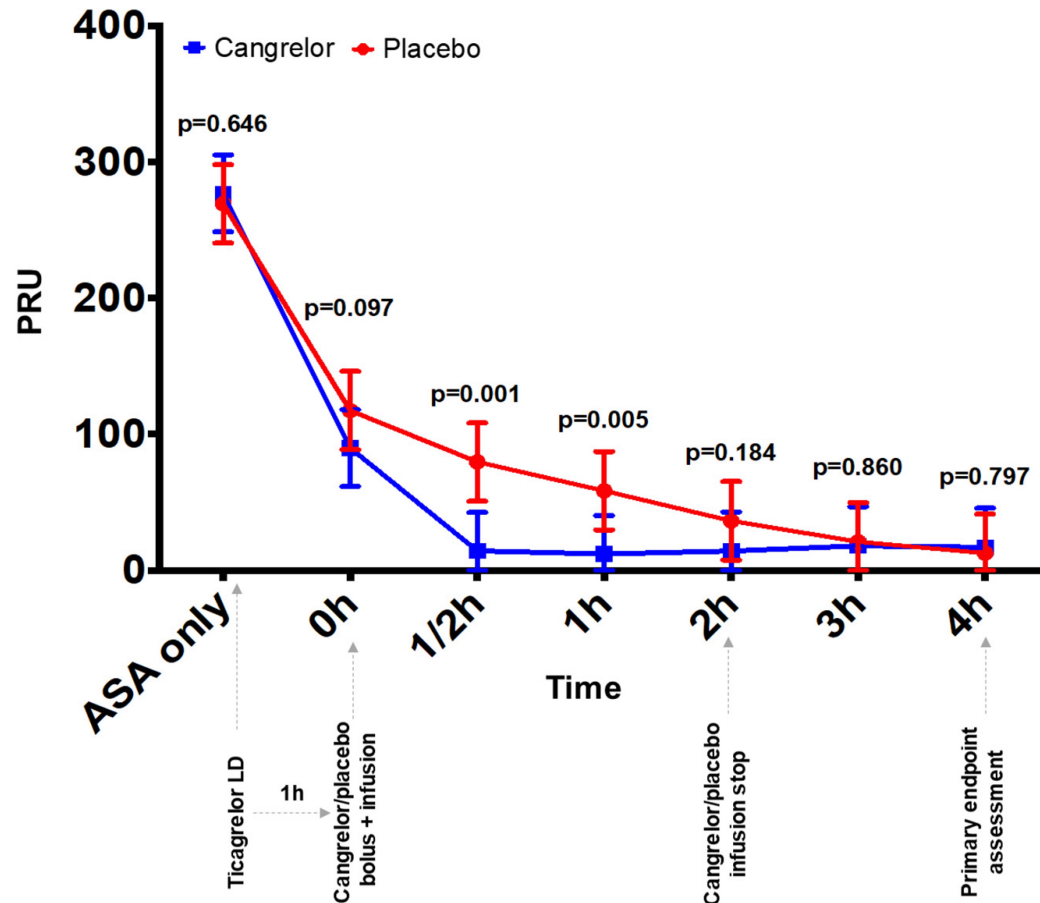


# Platelet Inhibition with Cangrelor, Tirofiban and Prasugrel



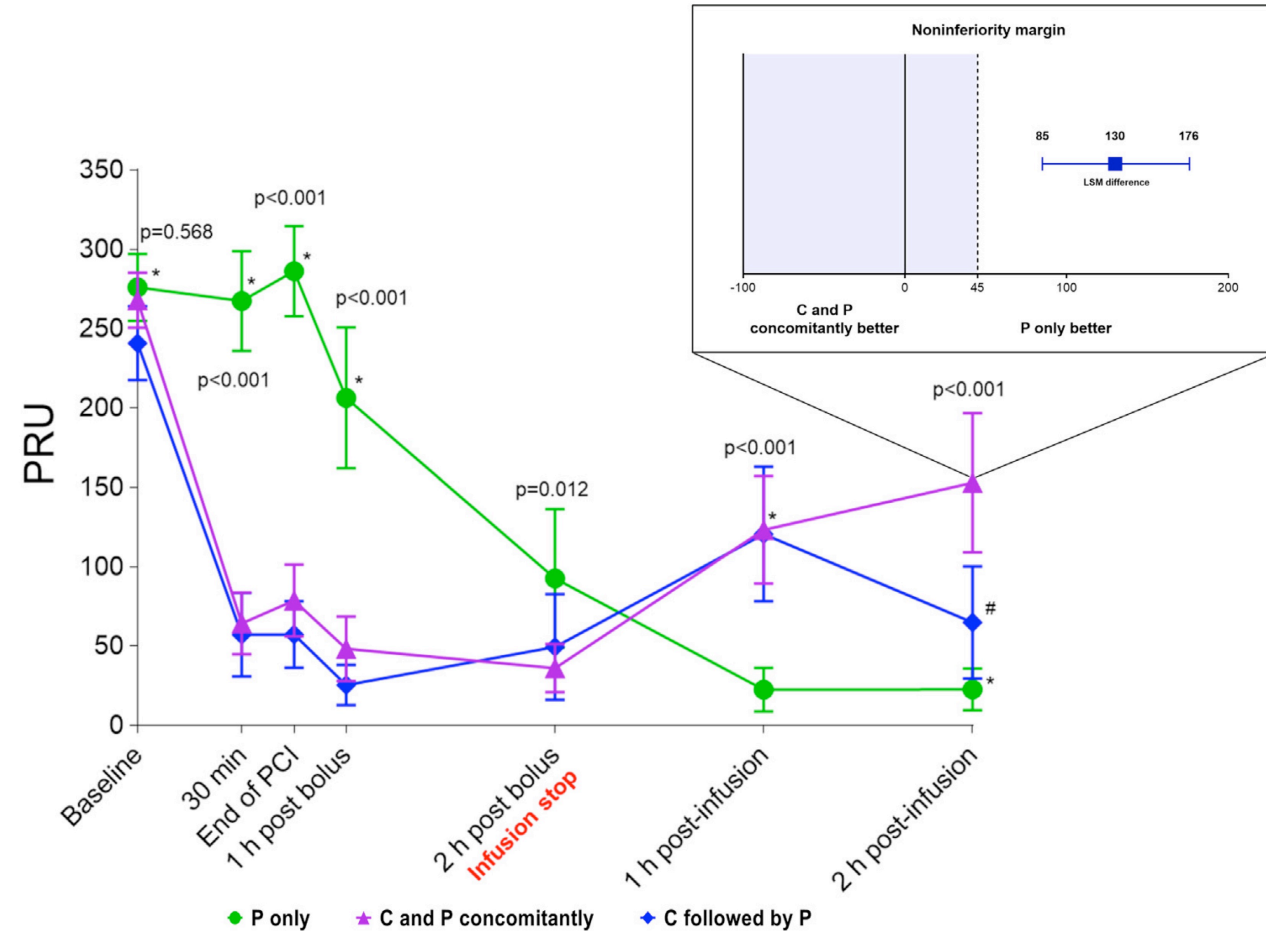
# Transitioning from IV to Oral P2Y12 Inhibitors

## Ticagrelor - SWAP-5



Franchi F, et al. J Am Coll Cardiol Intv 2023;16:36–46

## Prasugrel - SWAP-6

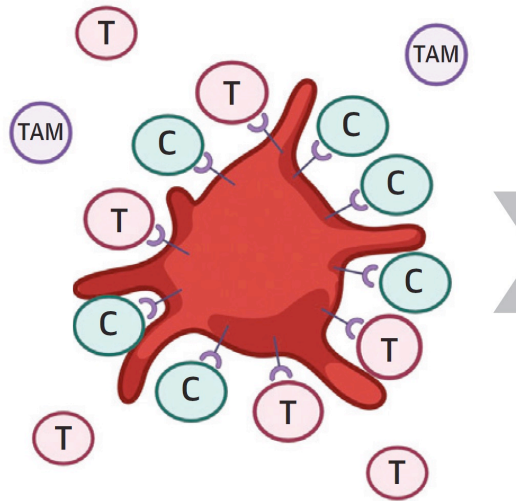


Franchi F, et al. J Am Coll Cardiol Intv 2023;16:2528–2539

# Transitioning from IV to Oral P2Y12 Inhibitors

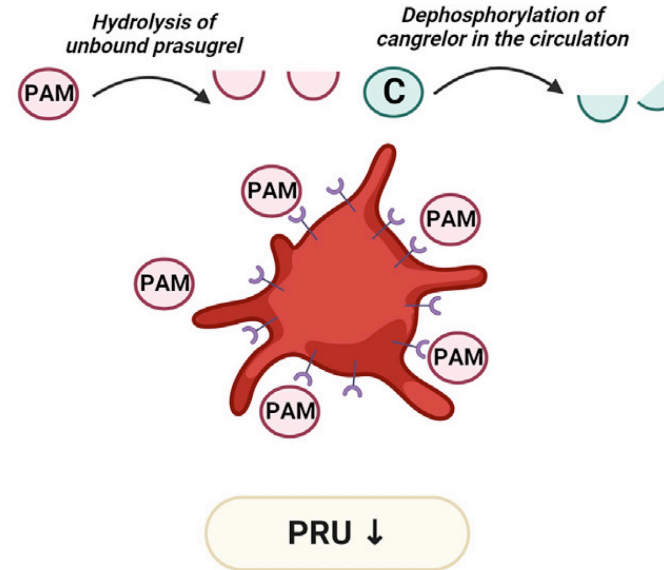
## Ticagrelor - SWAP-5

Concomitant Ticagrelor  
and Cangrelor

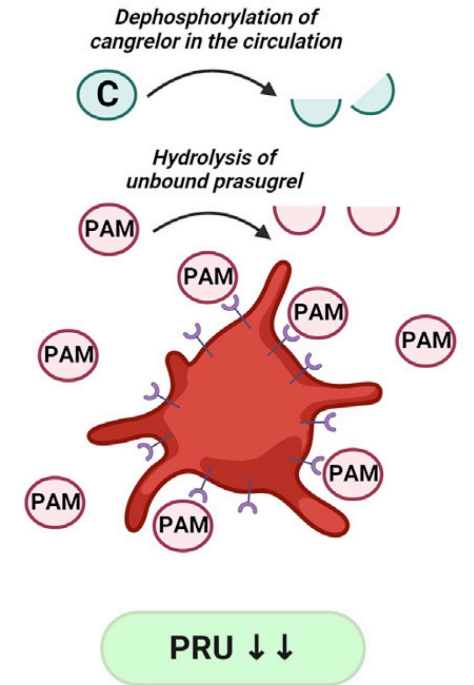


## Prasugrel - SWAP-6

Concomitant Prasugrel  
and Cangrelor



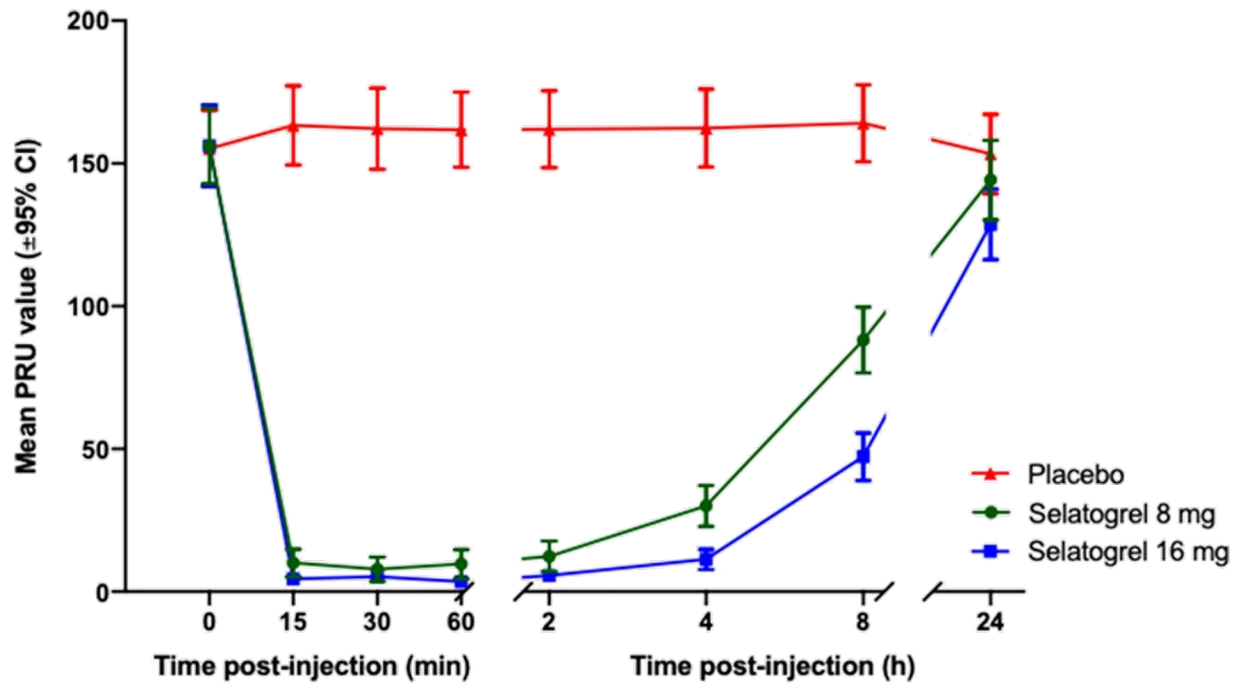
Cangrelor followed by  
Prasugrel at the end of infusion





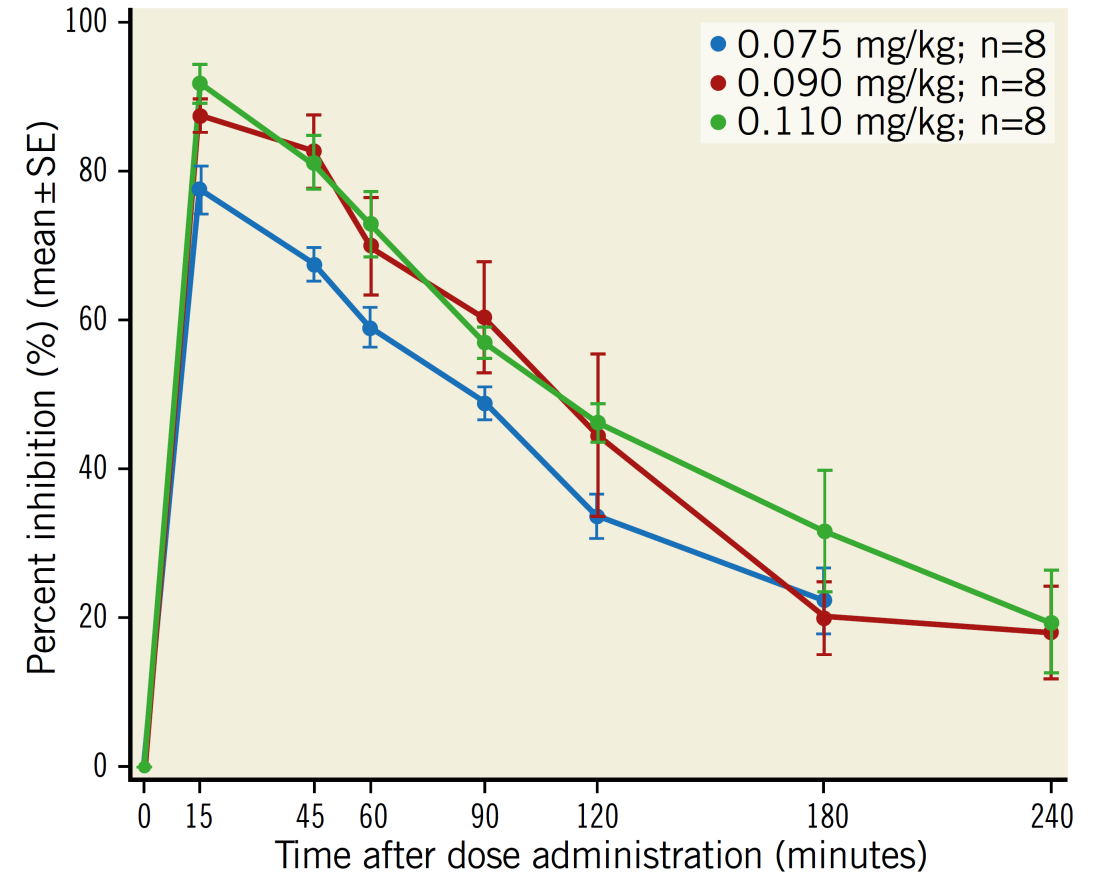
# Subcutaneous Antiplatelet Therapies

## Selatogrel



Storey R. et al. *Eur Heart J* 2020;41:3132–3140

## RUC-4 (Zalunfiban)



Bor W.L. et al. *EuroIntervention* 2021;17:e401-e410

# Conclusions

- **Intravenous antiplatelet drugs provide fast and potent inhibition of platelet activity**
- **Patient selection and coronary anatomy knowledge is key to balance the efficacy and safety profile of these drugs**
- **There is a gradient in platelet inhibition:**
  - **Cangrelor (++)**
  - **GPI (++++)**
- **Residual uncertainties:**
  - **Do we need 100% IPA?**
  - **Role of Cangrelor in the era of new P2Y12-i**
  - **Optimal transition modality from intravenous to oral antiplatelet therapy**
  - **Role of subcutaneous antiplatelet drugs**