

Learn from Practice : Optimal PCI Treatment for HBR Patients

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Disclosure

Consulting Fees/Honoraria:

N/A

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- DAPT for high ischemic risk
- Cases

More patients are at higher risk for bleeding!

Elderly
patients

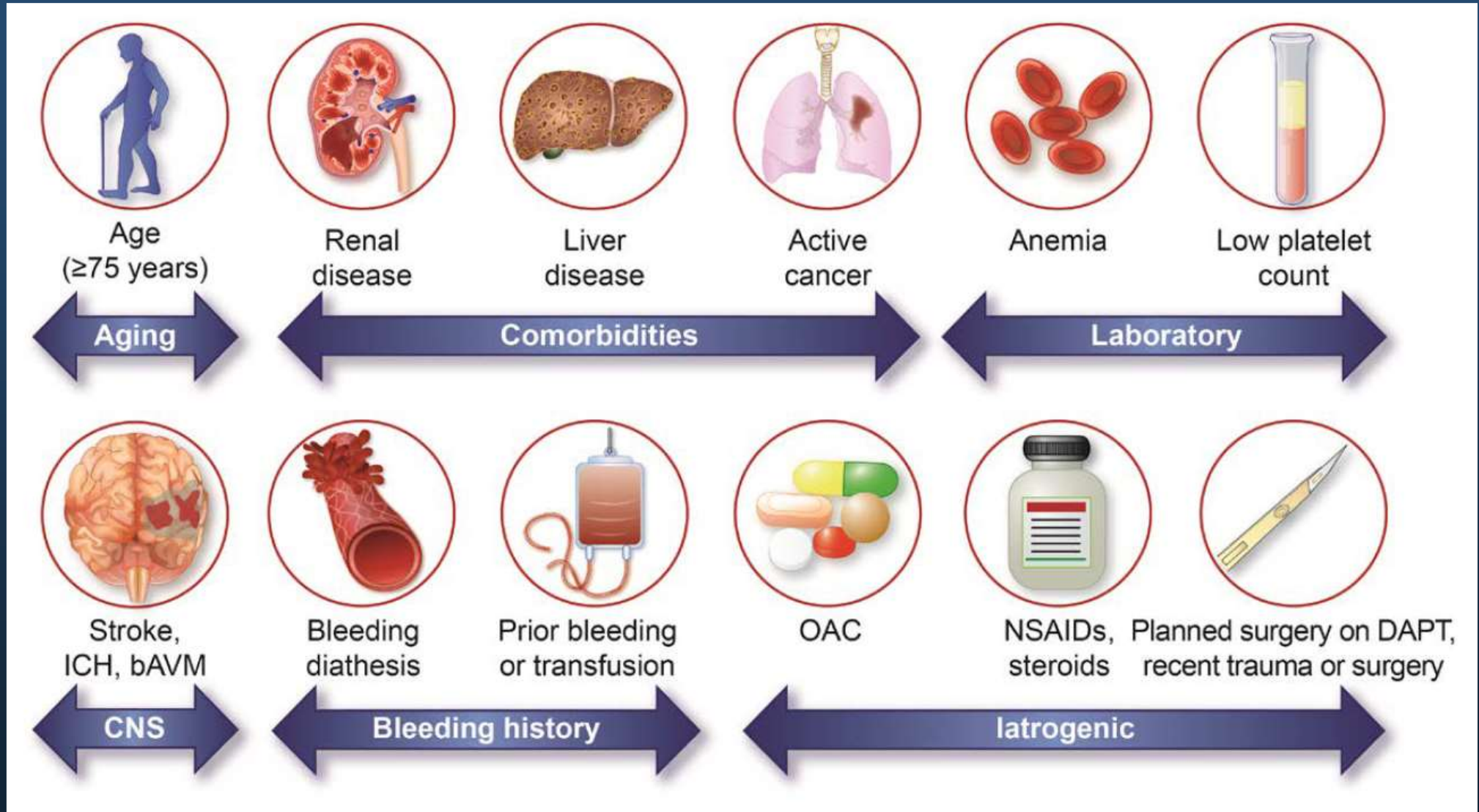
CKD

Long-term
NSAIDs
use

Atrial
Fibrillation
with DOAC

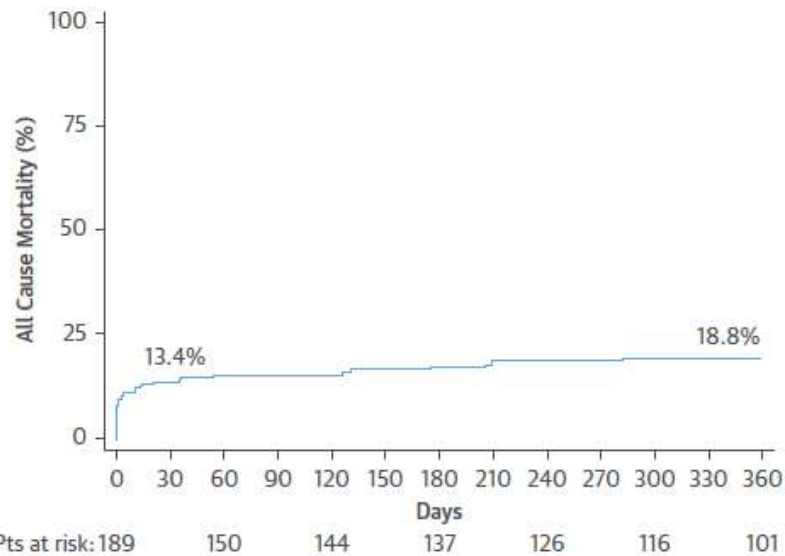
Non-
cardiac
surgeries

ARC-HBR - make up about 40% of the PCI

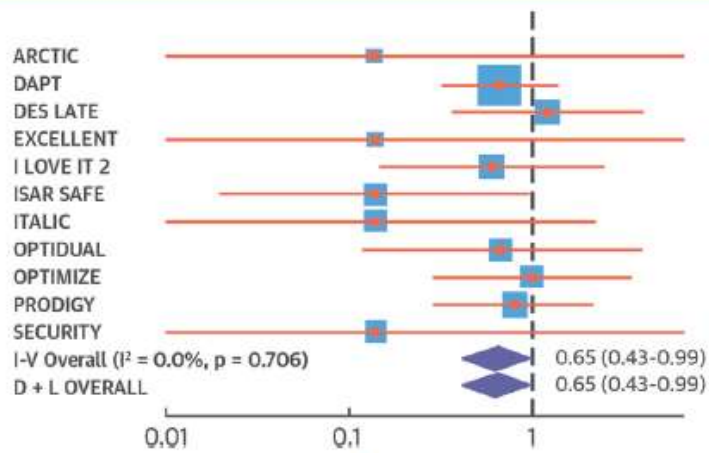


Mortality after the occurrence of bleeding is high, and shorter DAPT associated with lower risk

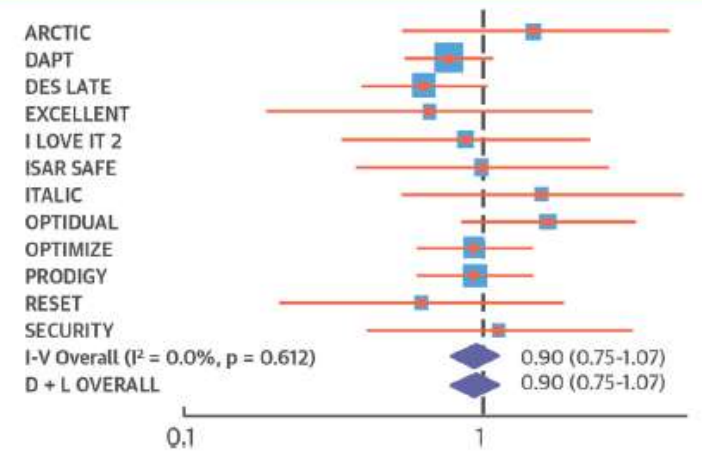
FIGURE 1 Mortality After the Occurrence of Bleeding



A. Bleeding-related Deaths

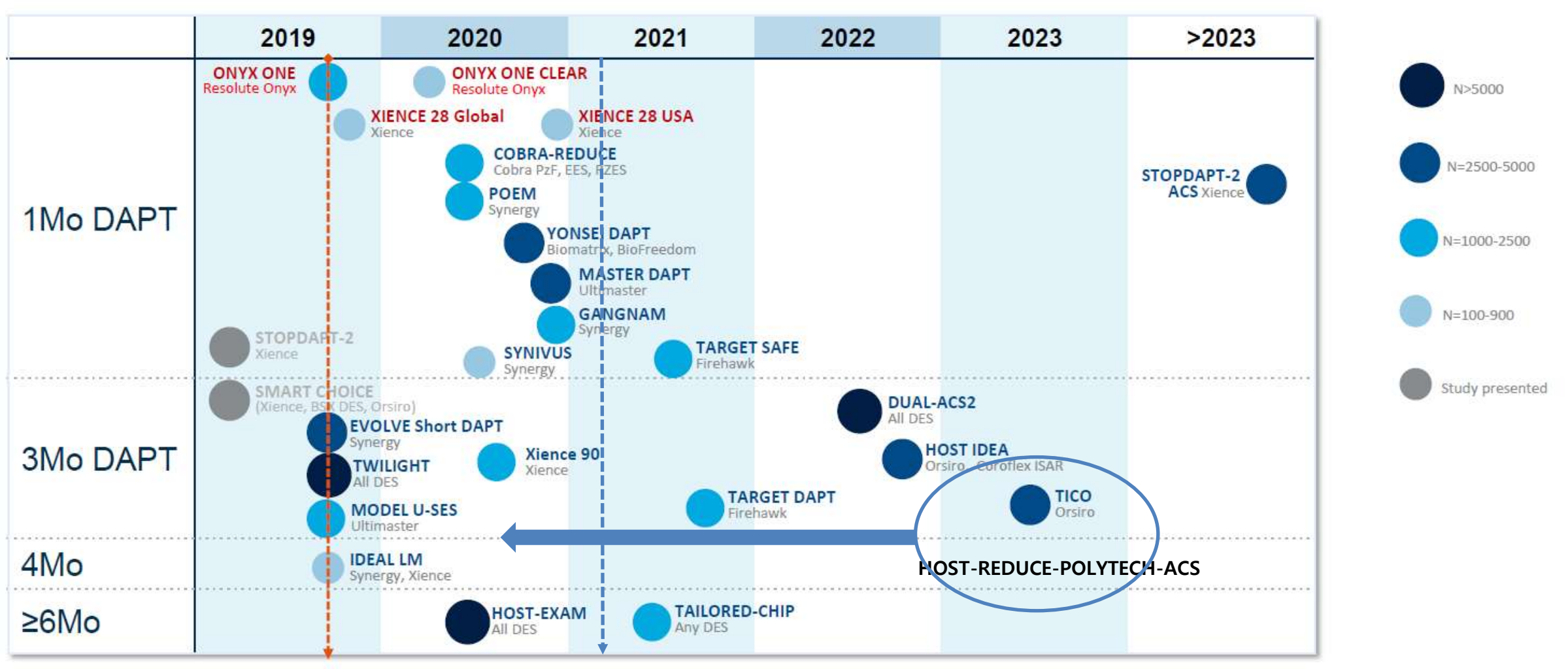


B. Non-Bleeding-related Deaths



Palmerini, T. et al. J Am Coll Cardiol. 2017;69(16):2011-22.

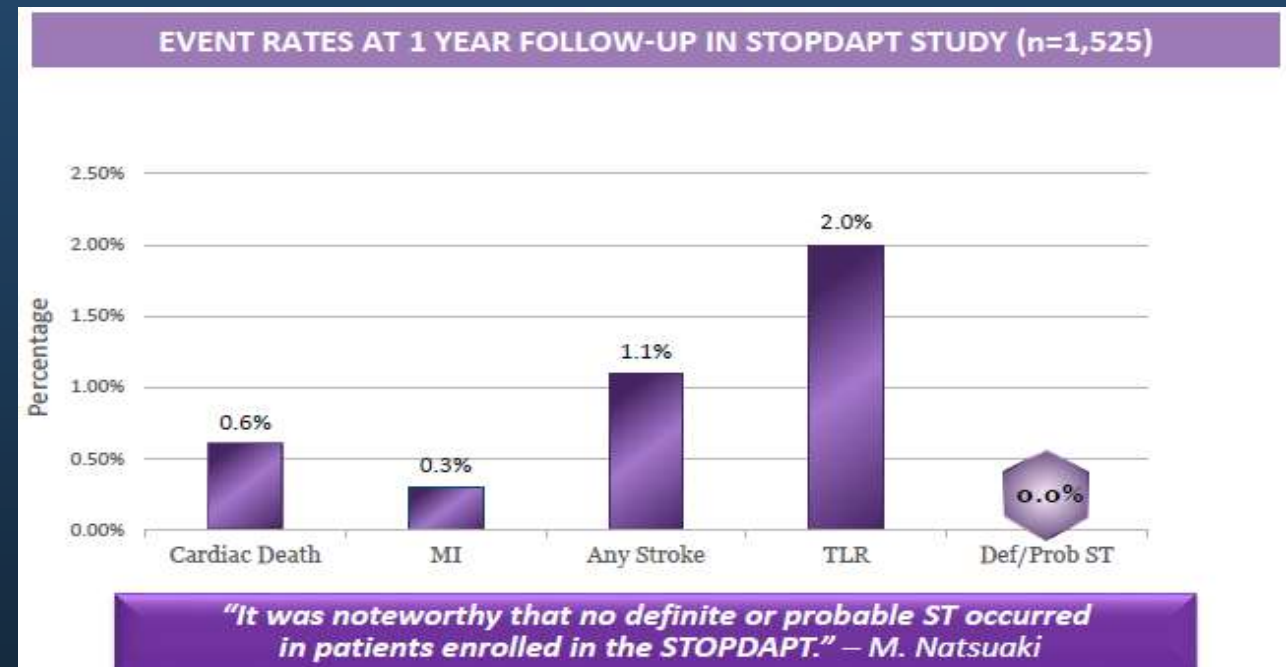
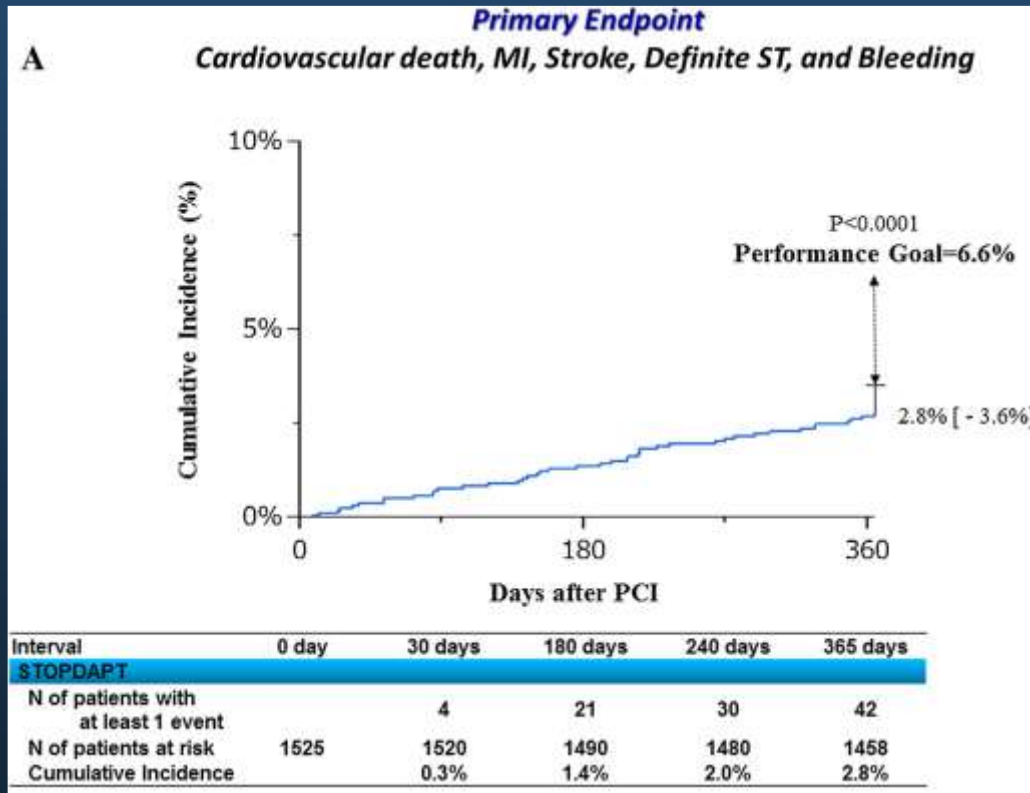
Short DAPT Trials



A Kirtane, Why Onyx One, TCT2019

STOPDAPT: safety of 3 months DAPT

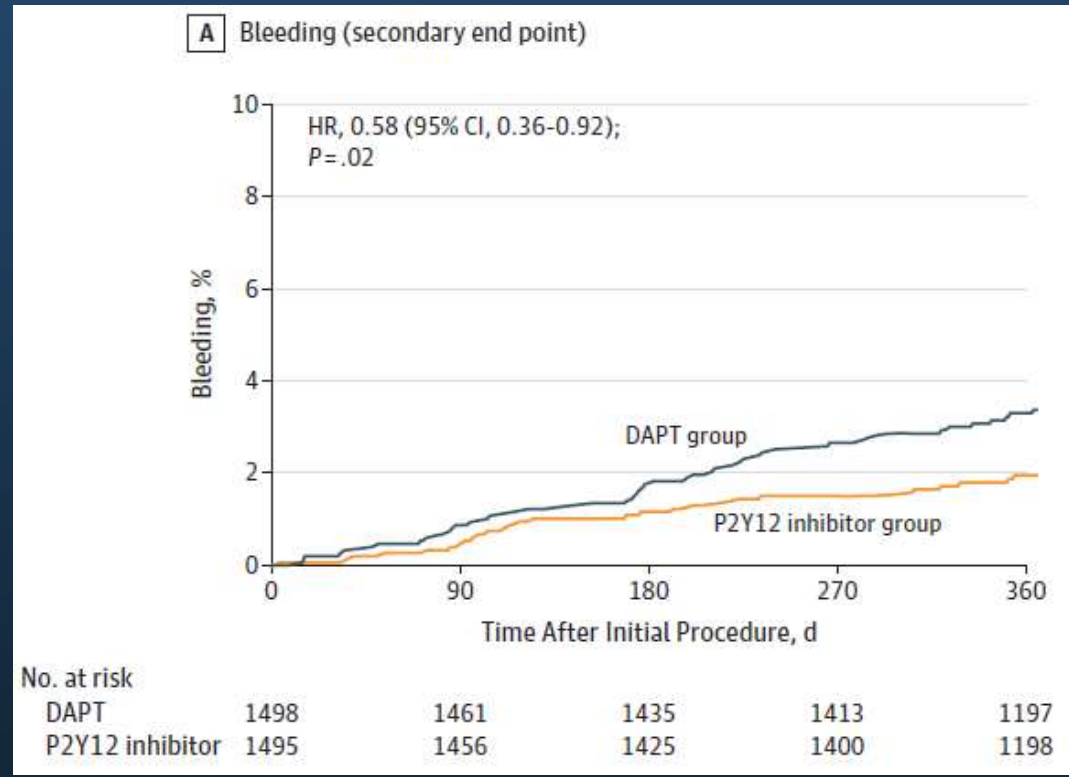
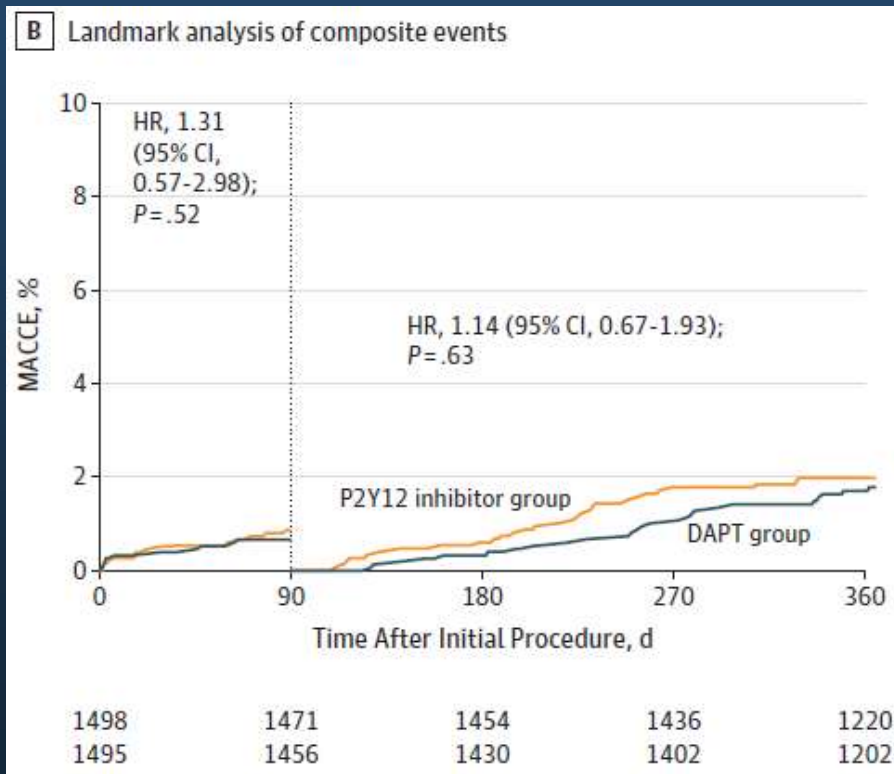
Patient: All comer (ACS 32%), PCI, multicenter, single arm RCT (n=1,525)
 Intervention: PCI using CoCr-EES, DAPT for 3 months (continue with aspirin)



Non-inferior when compared with RESET group (historical comparison group)

SMART CHOICE: safety of 3 months DAPT

Patient: All comers (ACS 58% → UA 31%), PCI, multicenter, RCT (n=2,993)
 Intervention: PCI using CoCr-EES, PtCr-EES or BP-SES, DAPT for 3 months vs. 12 months
 Comparison: DAPT for 3 months (continue with clopidogrel) vs. 12 months



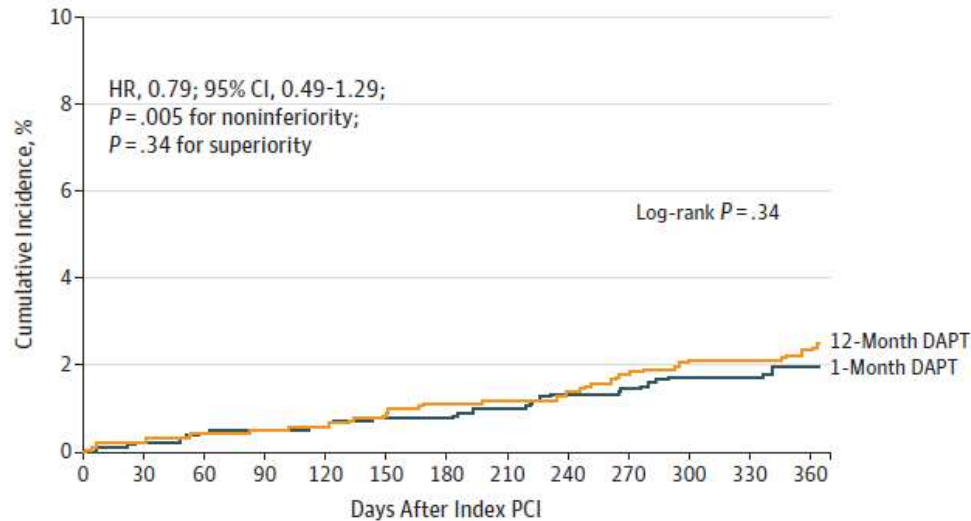
Consistent across various subgroups including clinical presentation(ACS/stable CAD) and type of P2Y12 inhibitors

Hahn et al. JAMA. 2019;321(24):2428-2437.

STOPDAPT-2: safety of 1 month DAPT

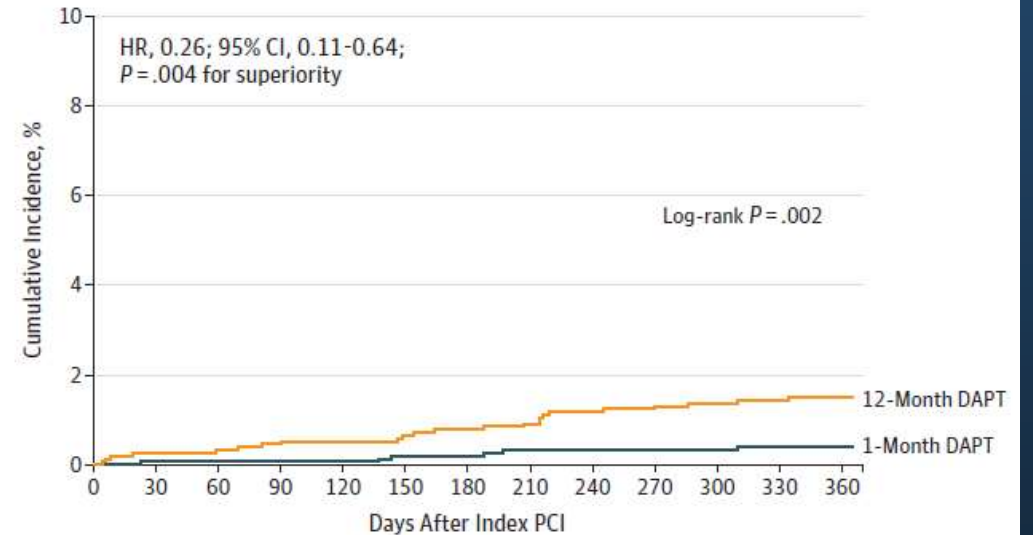
Patient: All comer (ACS 38%), PCI, multicenter, RCT (n=3,045)
 Intervention: PCI using CoCr-EES, DAPT for 1 months vs. 12 months
 Comparison: DAPT for 1 months vs. 12 months

B Composite of cardiovascular death, MI, definite stent thrombosis, or ischemic and hemorrhagic stroke



No. at risk	0	30	60	90	120	150	180	210	240	270	300	330	360
12-month DAPT	1509	1504	1490		1488	1479	1473	1458		1458	1172		
1-month DAPT	1500	1495	1480		1476	1471	1458	1446		1446	1157		

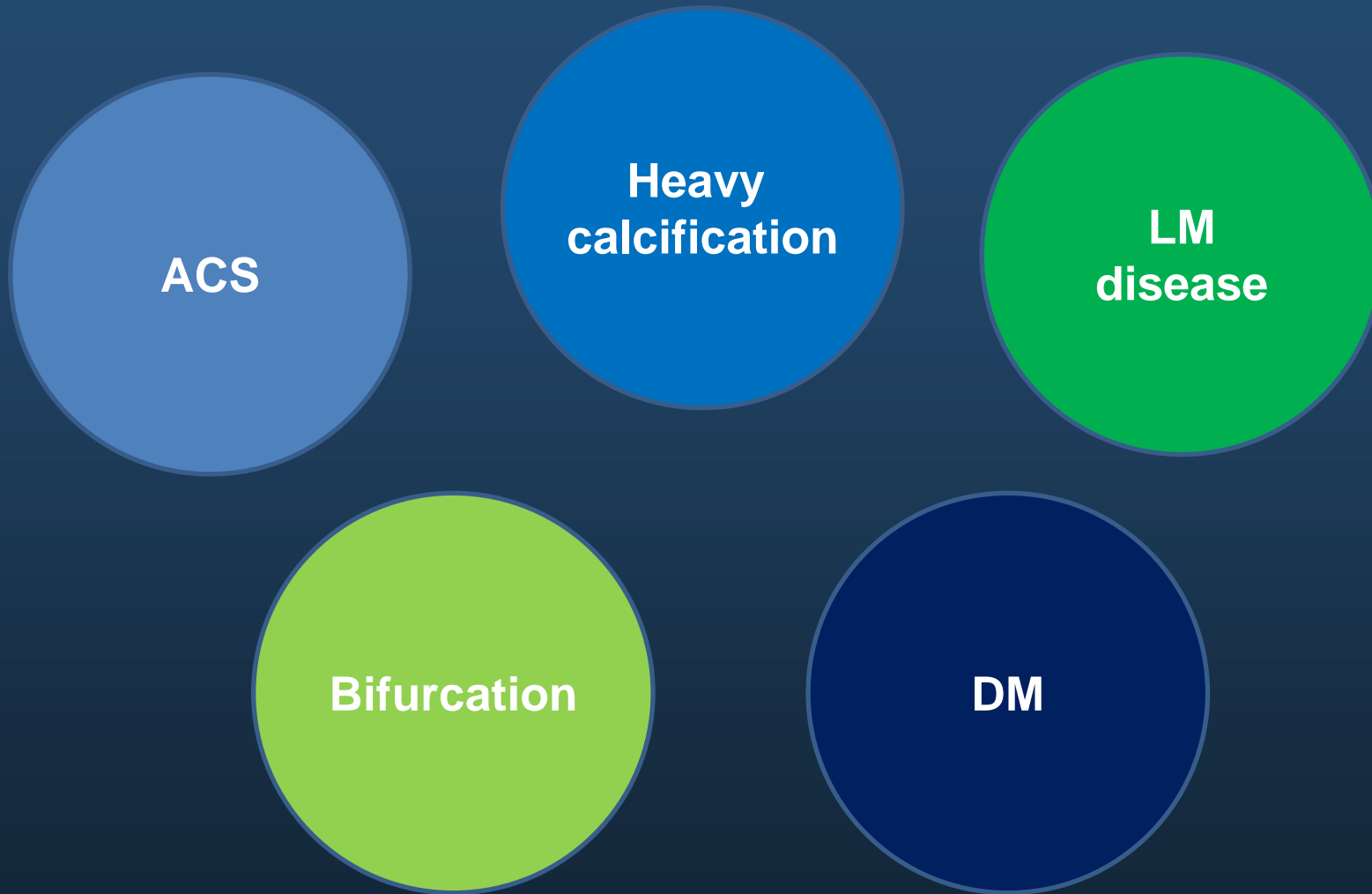
C TIMI major/minor bleeding



No. at risk	0	30	60	90	120	150	180	210	240	270	300	330	360
12-month DAPT	1509	1504	1491		1487	1480	1471	1462		1462	1180		
1-month DAPT	1500	1495	1483		1481	1477	1467	1457		1457	1166		

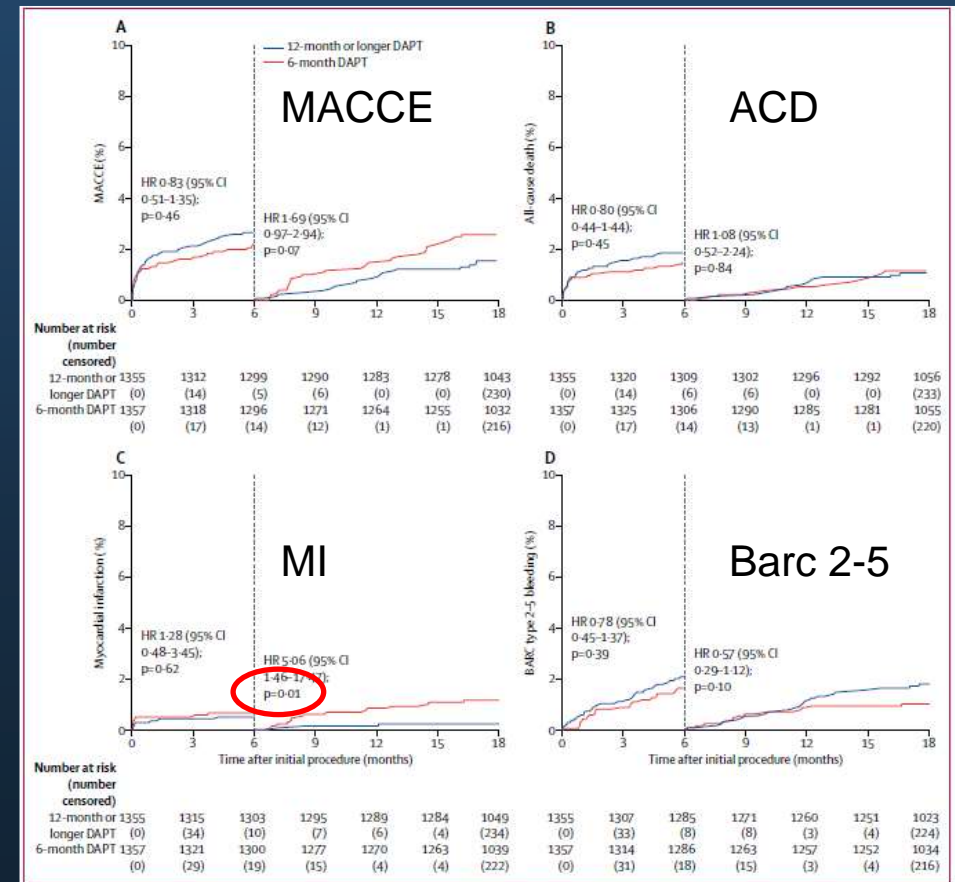
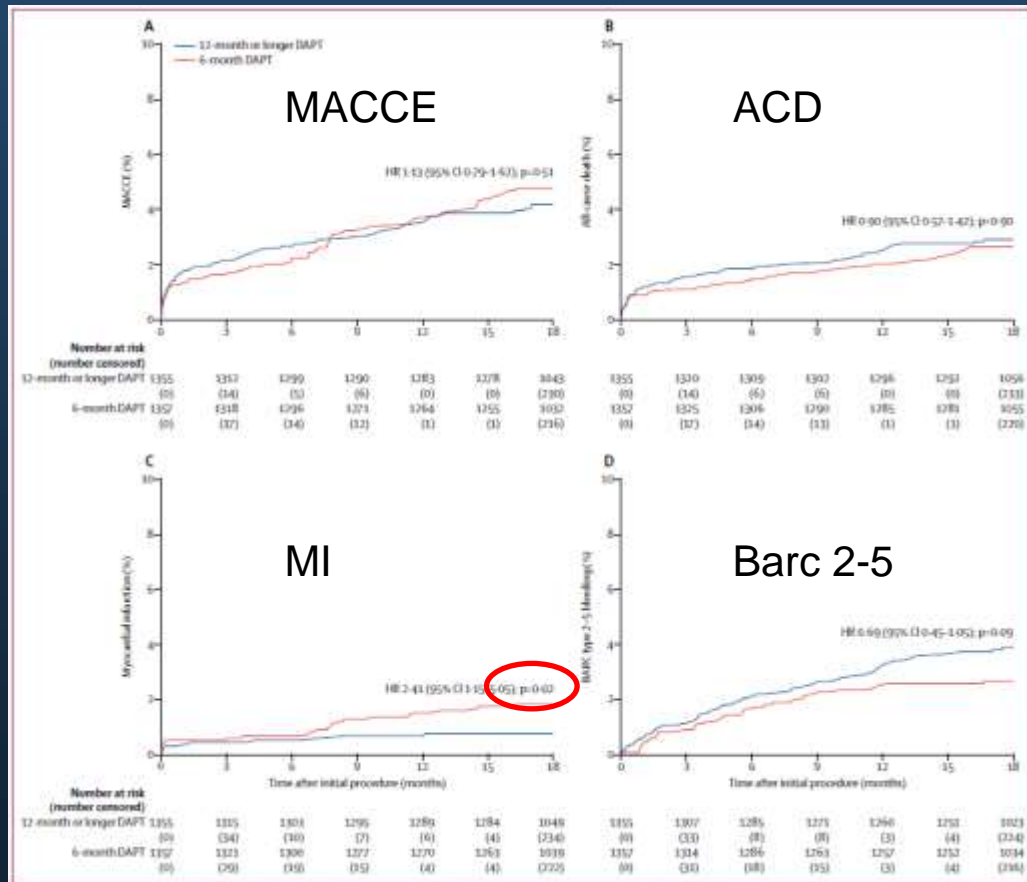
Consistent across subgroups except for the small subgroup of patients with severe CKD

Need for prolonged DAPT or potent antiplatelet agents?



SMART DATE: safety of 6 months DAPT in ACS

Patient: ACS 100% (MI 69%), PCI, multicenter, RCT (n=2,712)
 Intervention: PCI, 6 months vs. 12 months or longer DAPT (aspirin + clopidogrel)
 Comparison: DAPT for 6 months vs. 12 months or longer DAPT



IDEAL-LM: left main disease for 4 months DAPT

Investigator initiated multi-centre international RCT with independent monitoring, CEC and statistical analysis

IDEAL-LM

All-comers:
• Syntax > 32
• ACS
• All EF

Patients with uLMCA disease who are accepted by the Heart Team for PCI

29 sites,
5 Countries
Dec 2014-
Sept 2016

818 patients randomized

Synergy:

- **Platinum-Chromium** backbone
- Strut thickness: **74**µm
- **Biodegradable** polymer
- **Abluminal** coating

Synergy + 4 months DAPT

Xience + 12 months DAPT

Xience:

- **Cobalt-Chromium** backbone
- Strut thickness: **81**µm
- **Permanent** polymer
- **Circumferential** coating

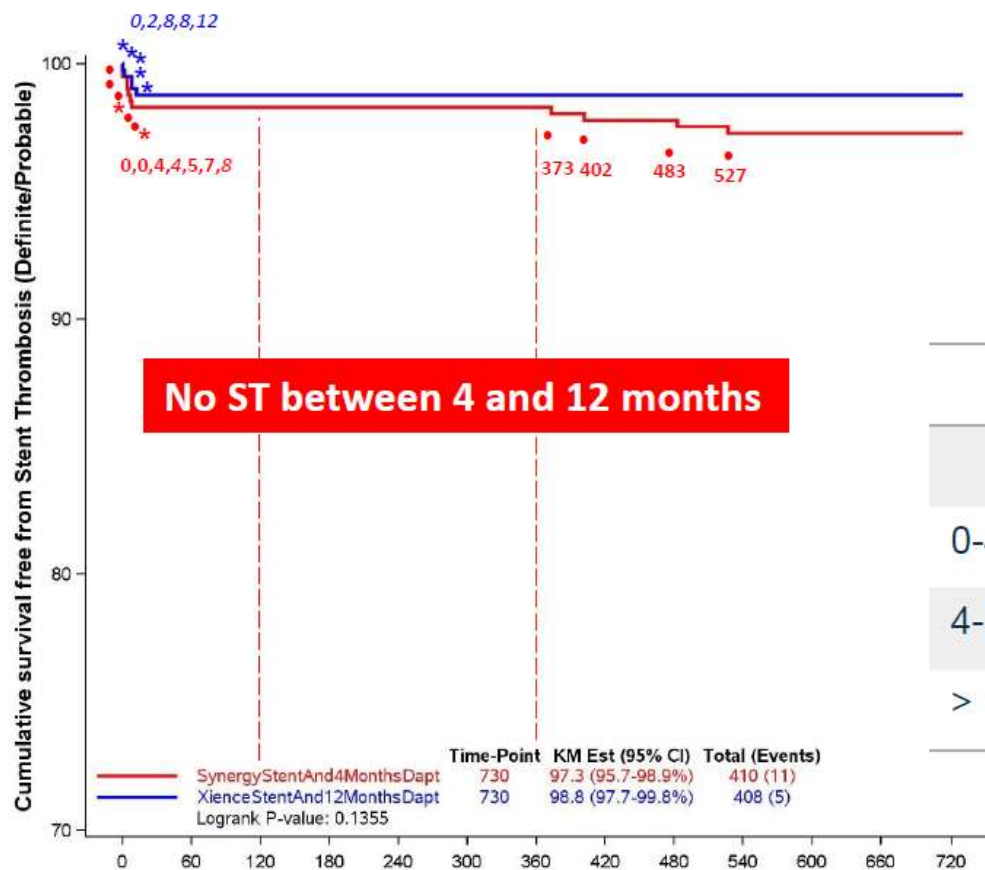
Clinical follow-up: 6,12,24 months

Primary Endpoint: 2 year MACE (death, MI, ischemic driven TVR)

IDEAL-LM: Definite/Probable Stent Thrombosis

Definite/Probable Stent Thrombosis

IDEAL-LM



Xience plus 12 months DAPT

Synergy plus 4 months DAPT

• Definite ST; * Probable ST

Definite/Probable ST

	Synergy	Xience
0-4 months	7	5
4-12 months	0	0
> 12 months	4	0

**All probable ST
→
“zero definite ST with Xience”**



SynergyStentAnd4MonthsDapt
XienceStentAnd12MonthsDapt

Days after Randomisation

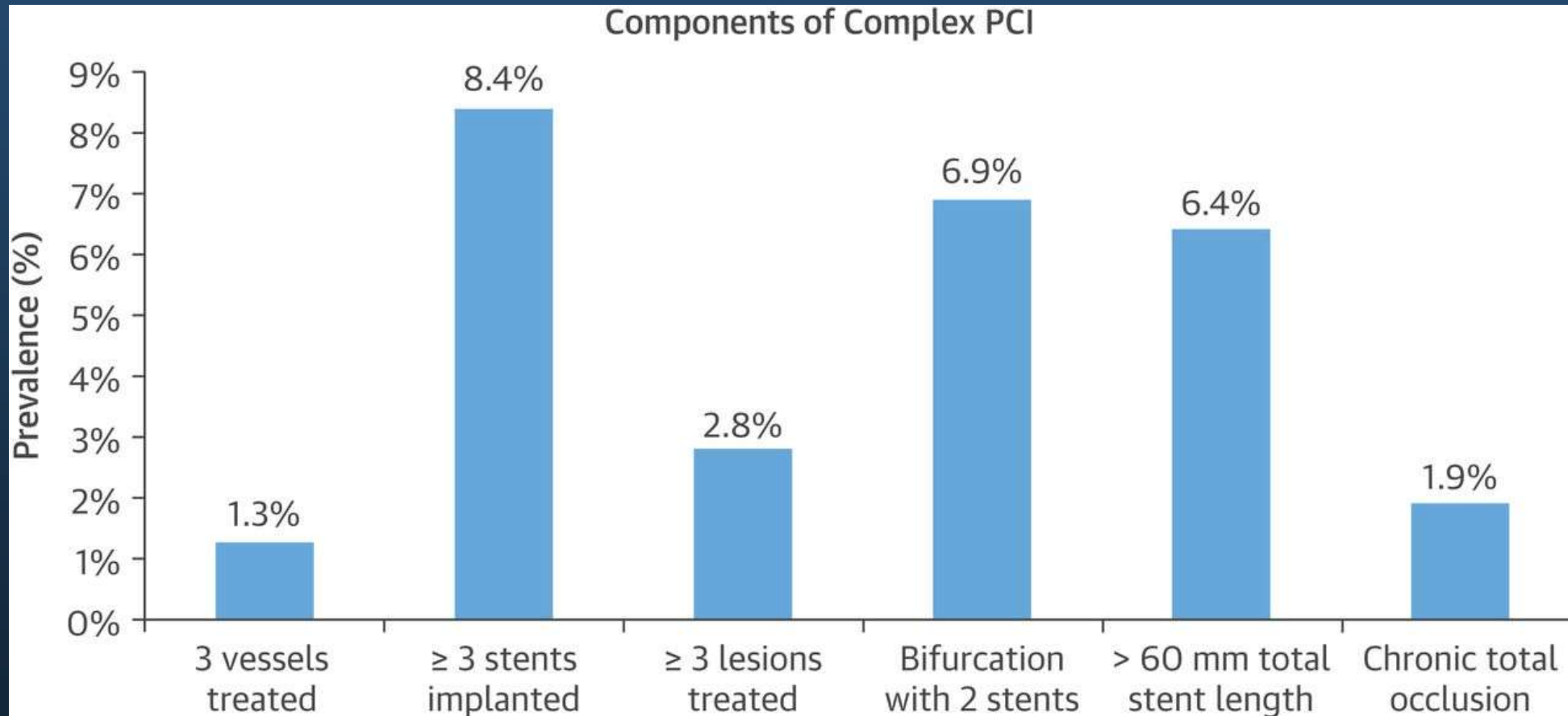
410	401	400	396	395	395	390	386	383	377	377	377	362
408	401	398	396	393	393	391	381	379	379	377	377	362

Cardiovascular®
Research Foundation

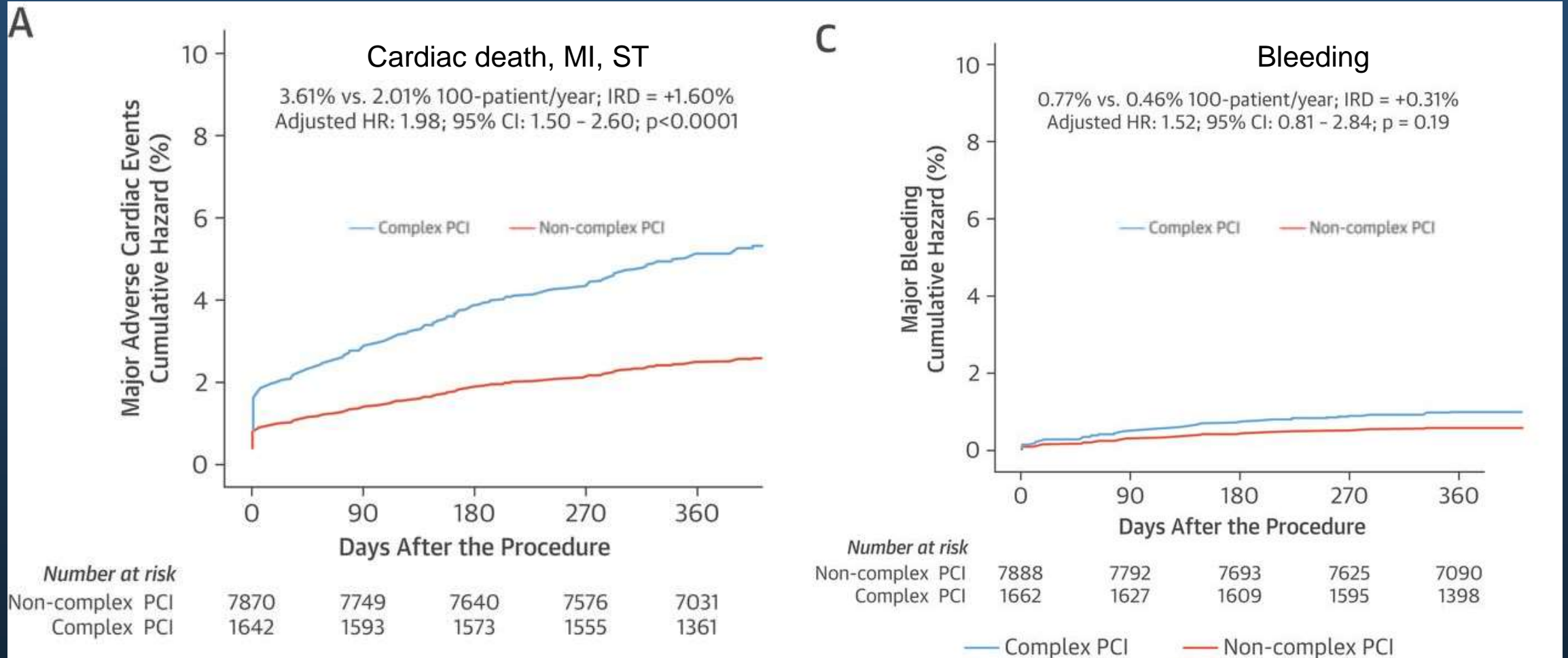
Meta-analysis: Duration of DAPT after complex PCI

Patient level pooled analysis

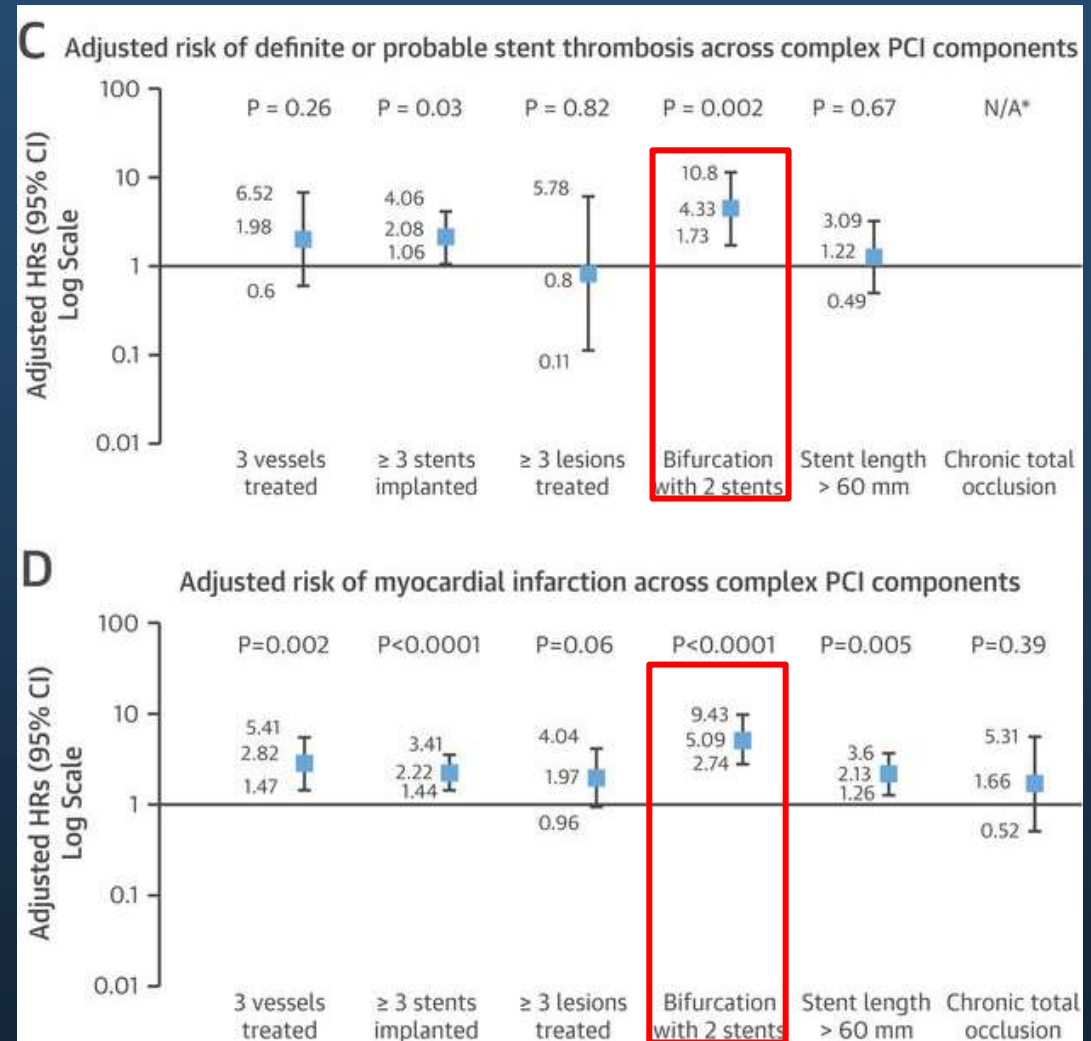
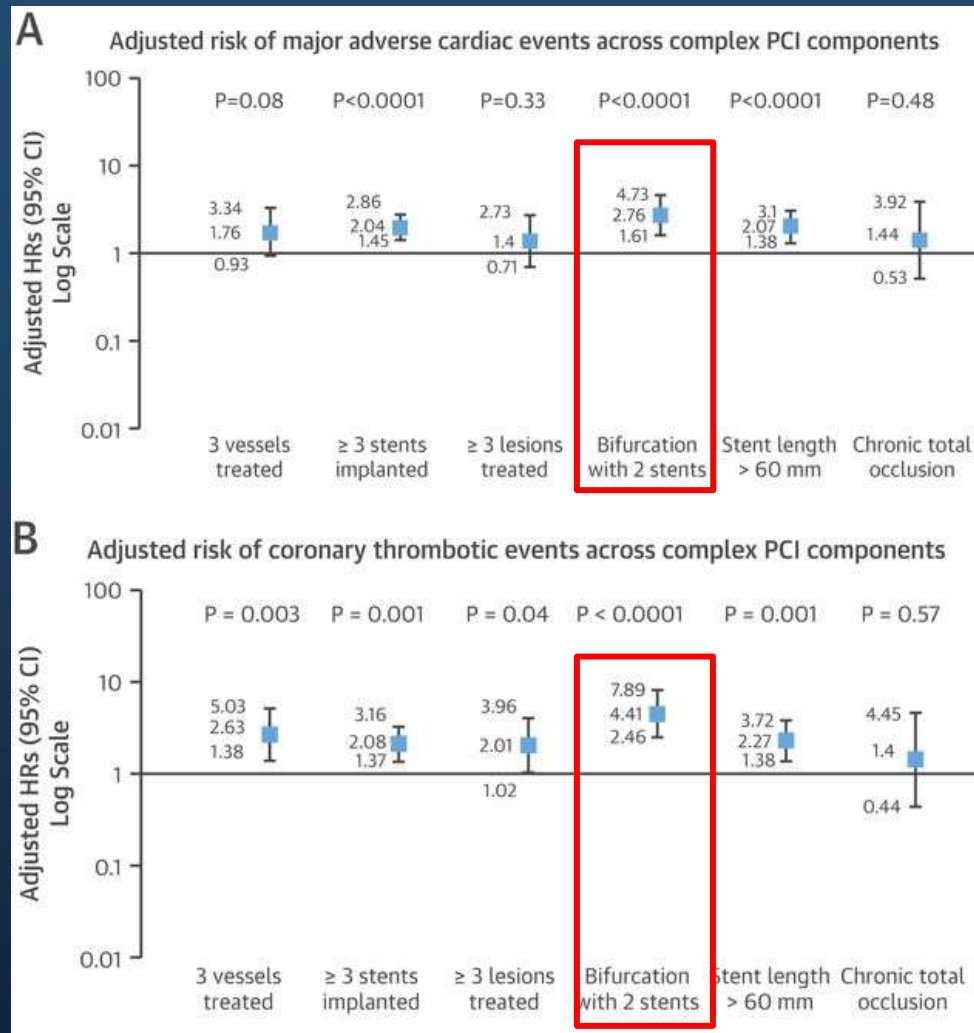
: OPTIMIZE, EXCELLENT, RESET, PRODIGY, ITALIC, and SECURITY



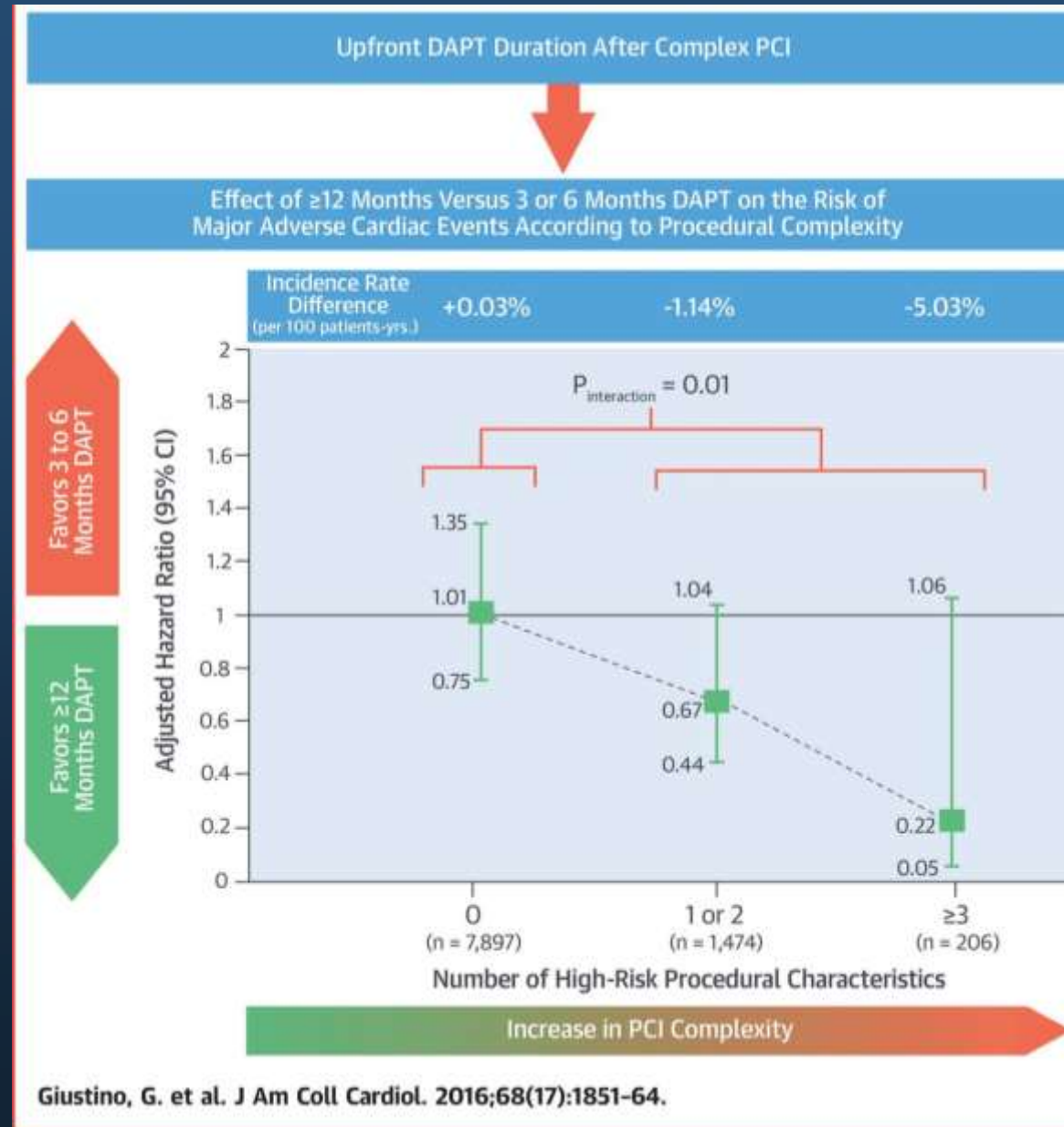
Effect of procedural complexity



Effect of high risk procedural subset

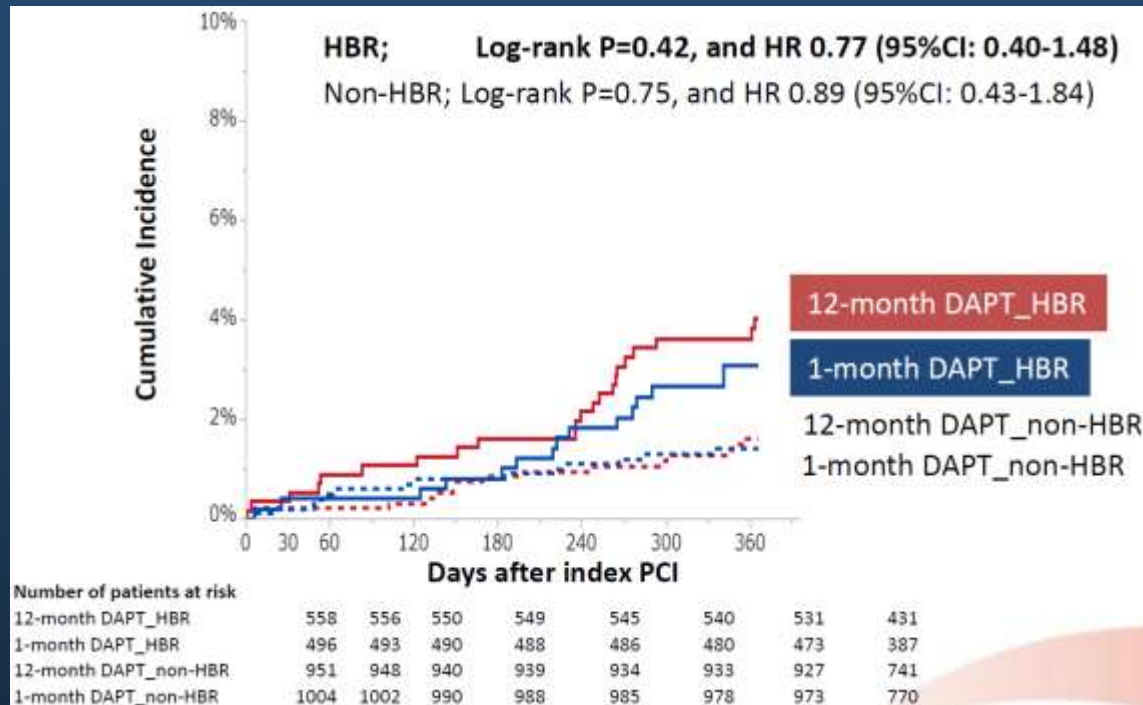


Ischemic Benefit on Long-Term DAPT According to the Degree of PCI Complexity



STOPDAPT-2 HBR

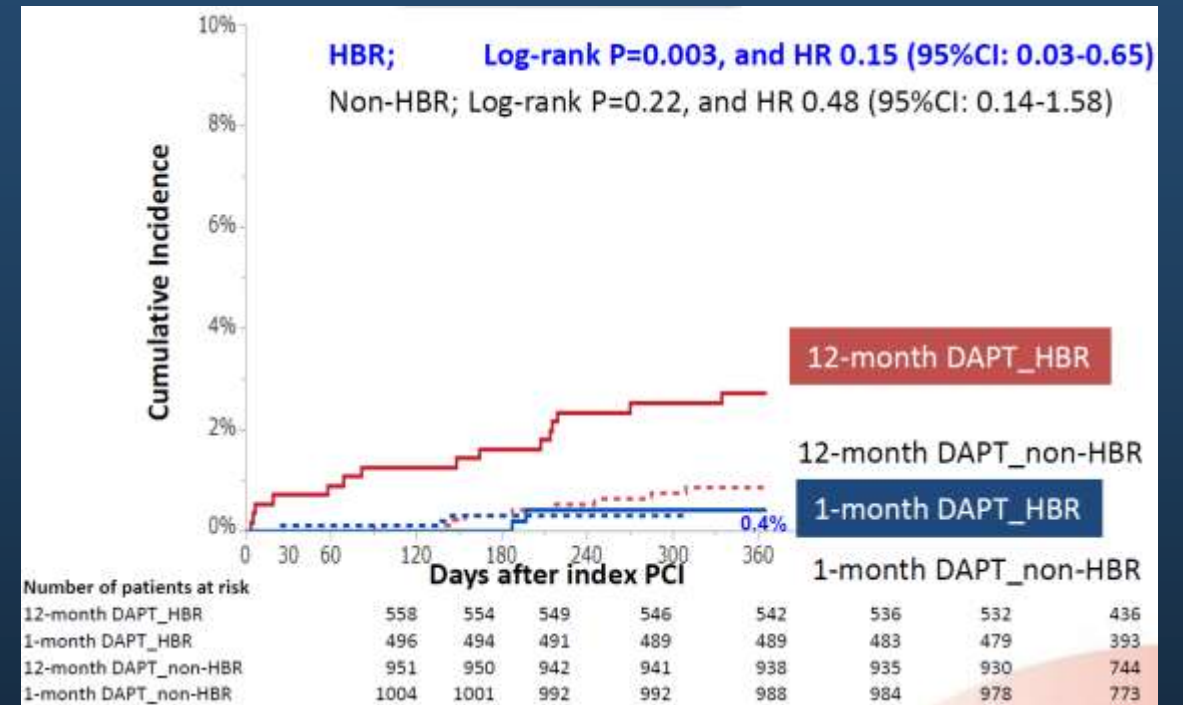
CV death/MI/ST/Stroke



HBR patients also had higher cardiovascular event rates without difference between 1- and 12-month DAPT.

T Kimura, TCT 2019

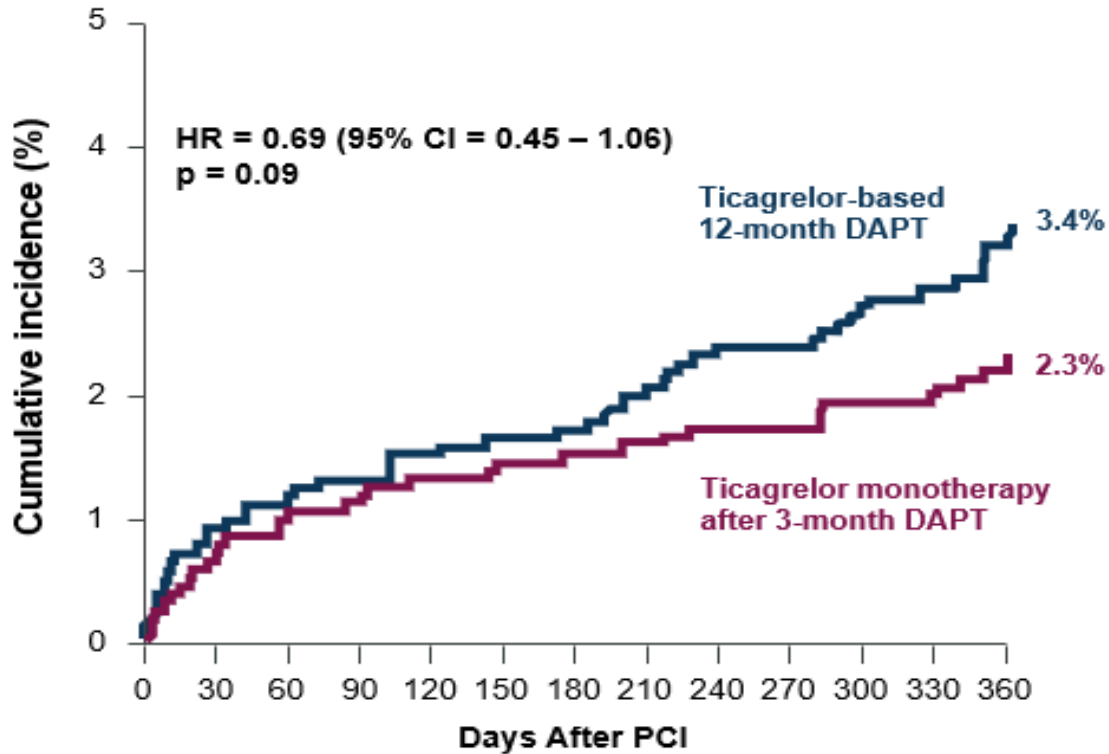
TIMI major/minor bleeding



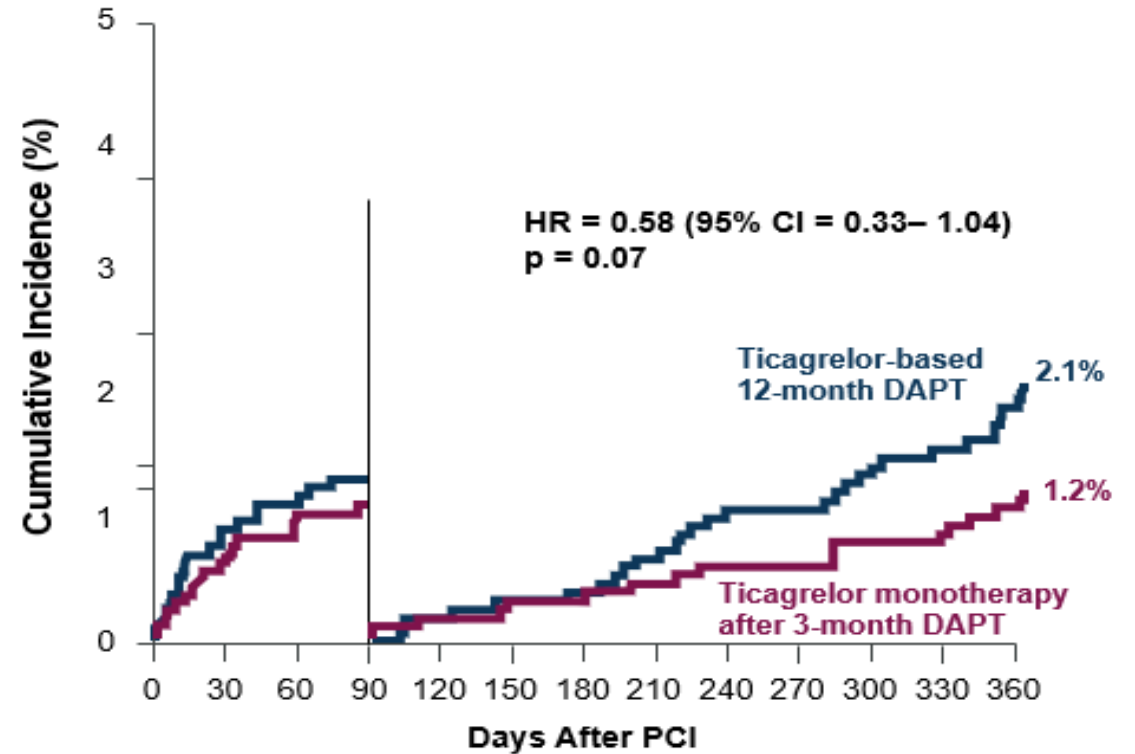
The benefit of 1-month DAPT in HBR patients was driven by marked reduction of bleeding

[TICO] Ticagrelor mono therapy group numerically improves MACCE compared to DAPT group

12-month Clinical Outcome



3-month Pre-specified Landmark Analysis



DAPT 1529 1498 1482 1462 1444

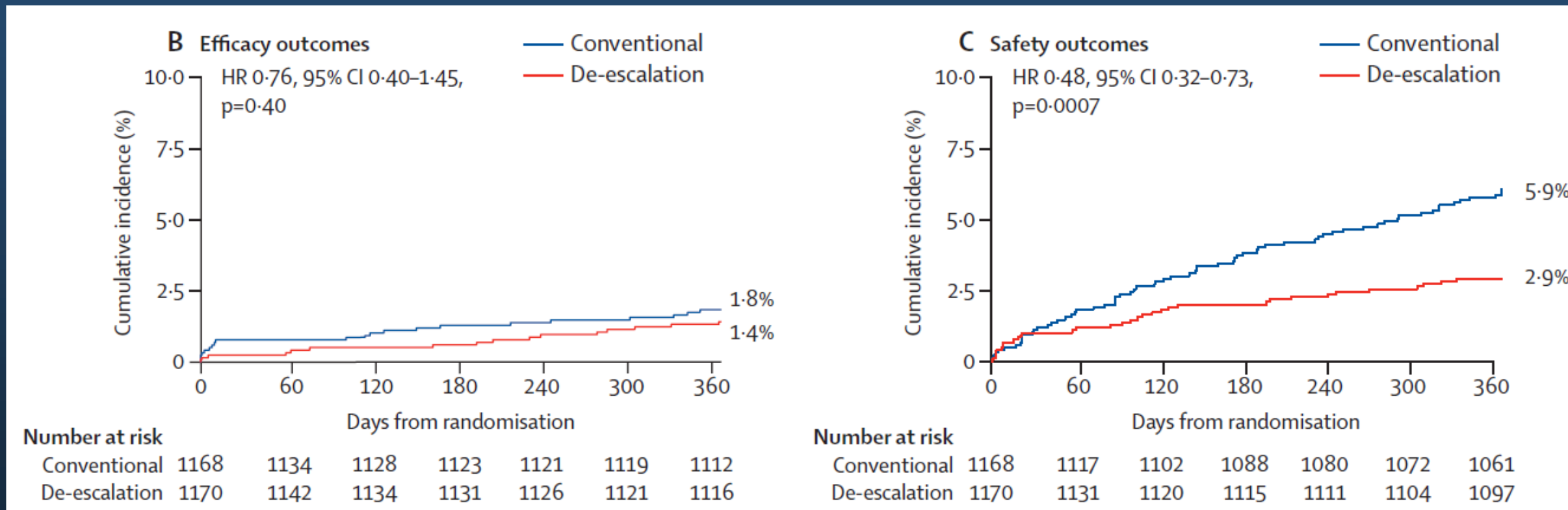
Monotherapy 1527 1492 1475 1460 1448

*MACCE = Composite of all-cause death, MI, stent thrombosis, stroke, TVR.

CI = confidence interval; DAPT = dual antiplatelet therapy; HR = hazard ratio; MACCE = major adverse cardiovascular and cerebrovascular events; MI = myocardial infarction; PCI = percutaneous coronary intervention; TVR = target-vessel revascularization.

Jang Y et al. Presented at: ACC20.WCC; March 28-30, 2020; Virtual.

Prasugrel-based de-escalation of dual antiplatelet therapy after percutaneous coronary intervention in patients with acute coronary syndrome (HOST-REDUCE-POLYTECH-ACS)



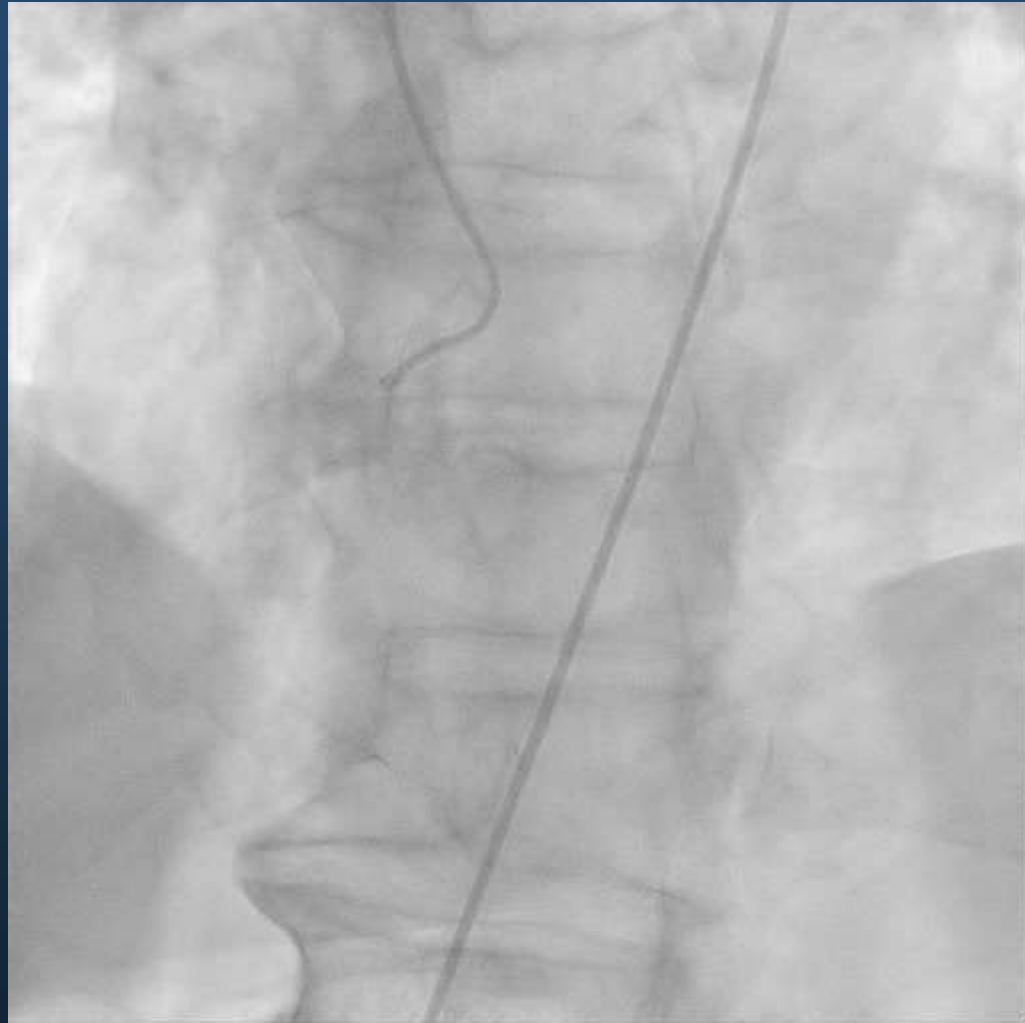
HS Kim, J Kang et al, Lancet 2020; 396: 1079-89

Case

- M/87
- Present illness
 - Sudden collapse, LOC → 119, BP not measurable, SpO2 70%
 - Arrived at ER, V/S stabilized, ECG II,III,aVF STE
- Past medical history
 - HBV LC
 - Chronic alcoholics

Case

mRCA near total occlusion



POBA with 3.0x15mm



Case

Onyx 3.0x18mm



Final

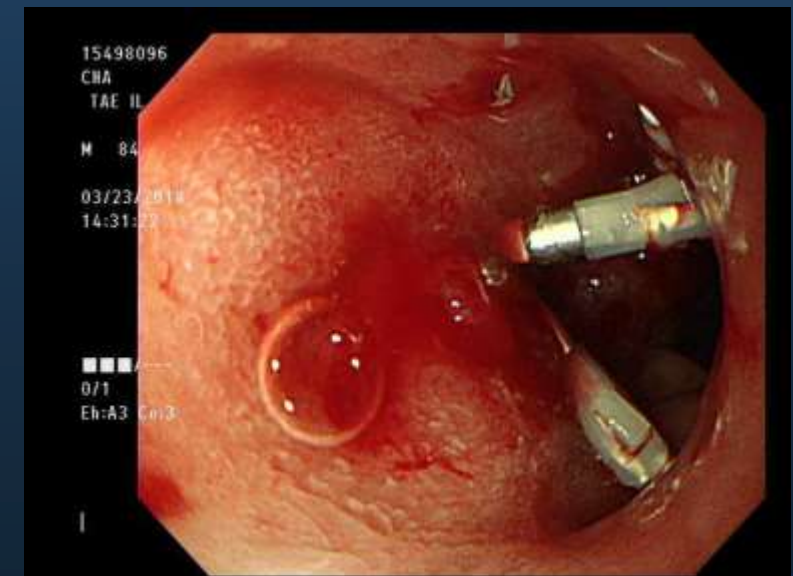
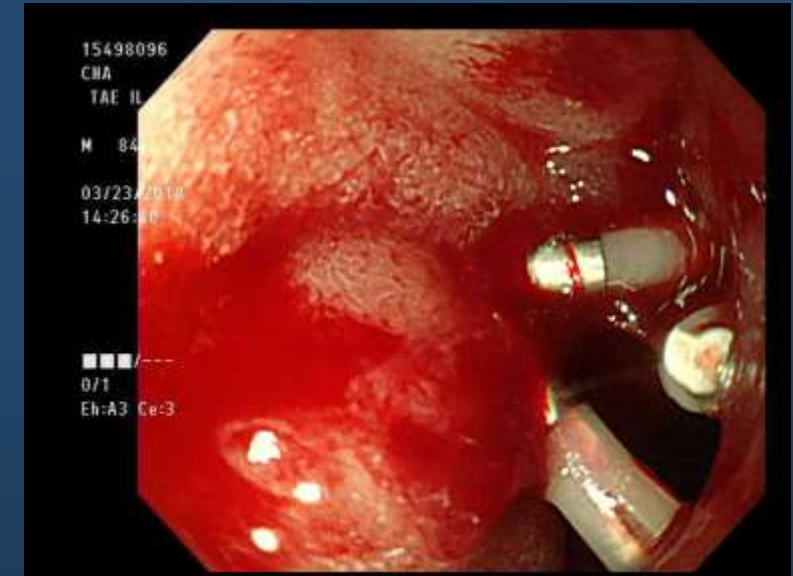


Case

- 2 days later, melena with hypotension
 - EGD: duodenal ulcer bleeding → hemoclippping done
 - Discharged with aspirin and clopidogrel, PPI

- 4 months later, patient visited ER again for melena
 - Patient was on aspirin and clopidogrel
 - EGD: ulcer scar
 - Patient was transferred for further care

- Never came back to my clinic....

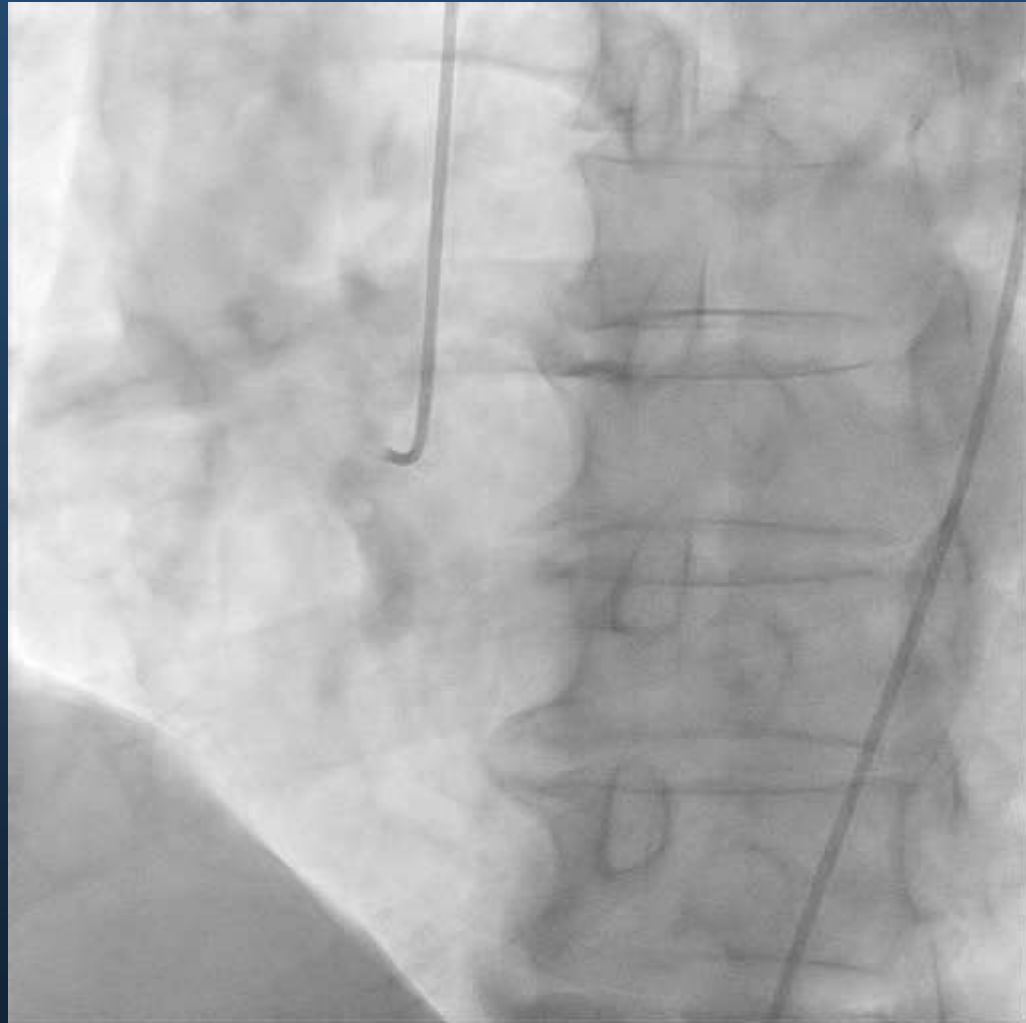


Case:

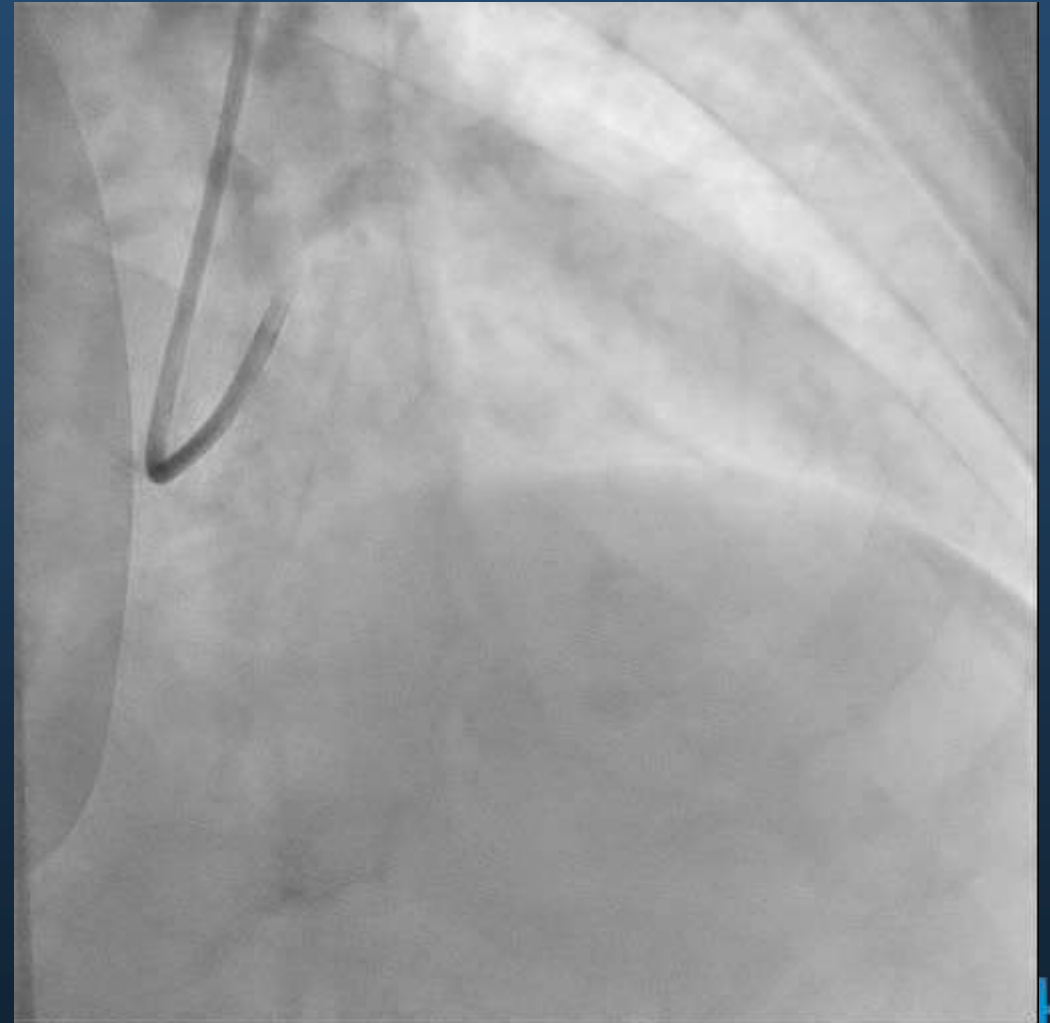
- M/82
- Present illness
 - Recent development of chest pain
 - While waiting for admission, patient collapsed
- Past medical history
 - MDS on treatment (anemia and thrombocytopenia)

Case

mRCA focal 70% stenosis

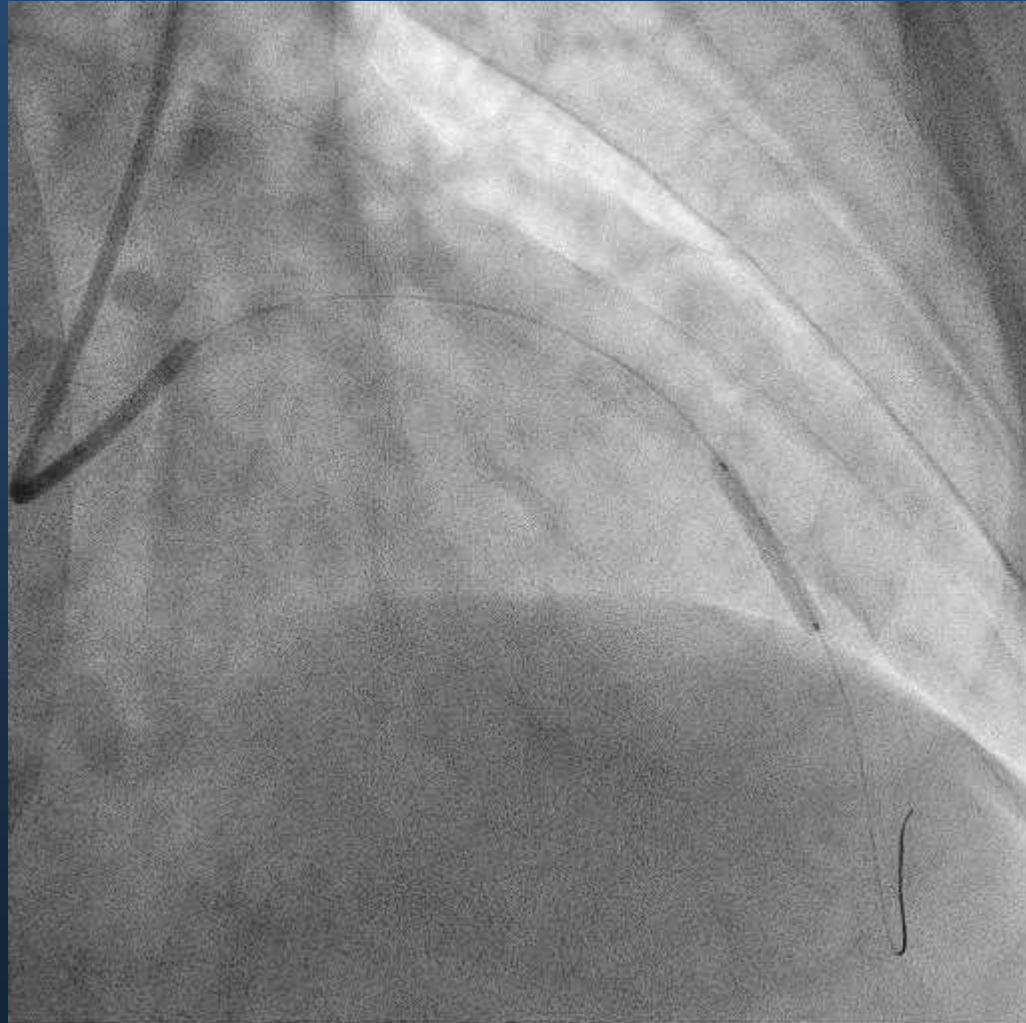


pdLAD diffuse stenosis upto 90%

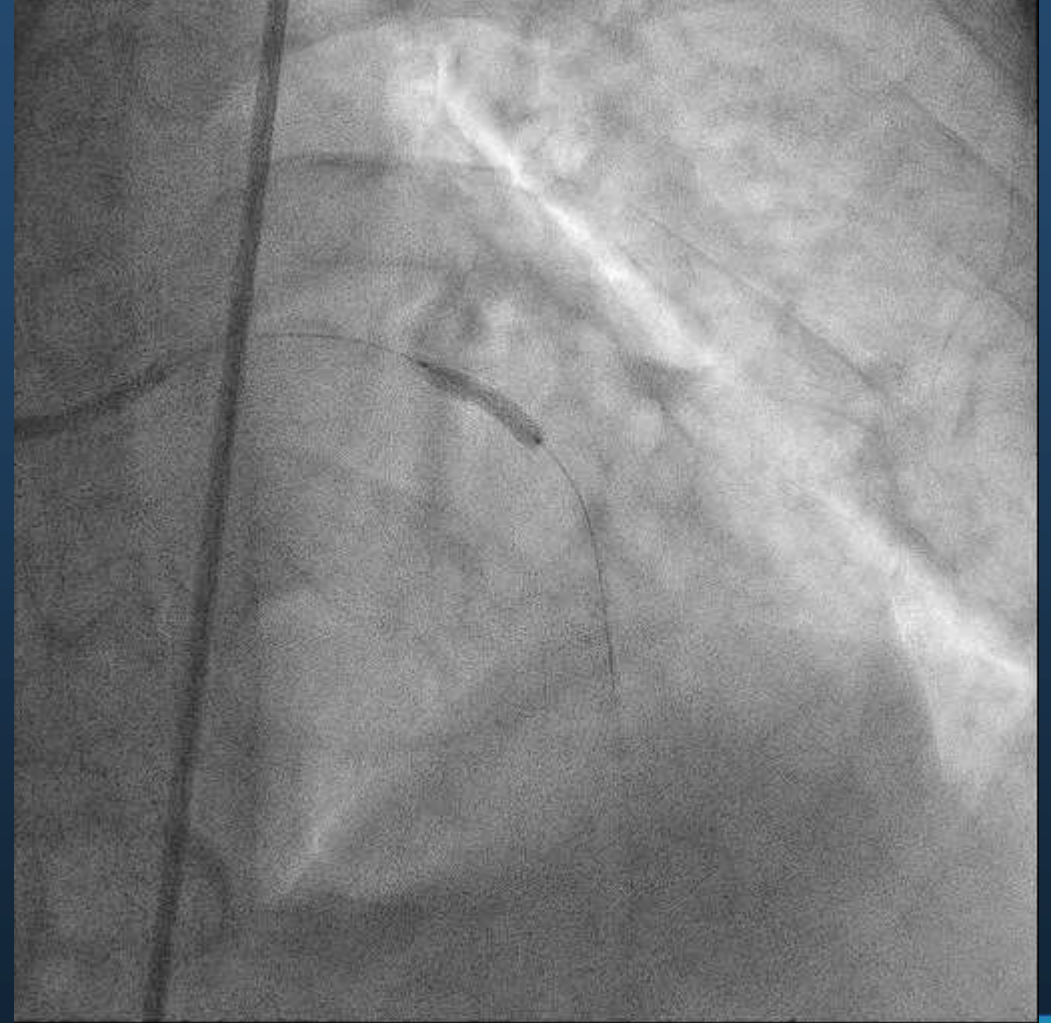


Case

Onyx 2.5x18mm

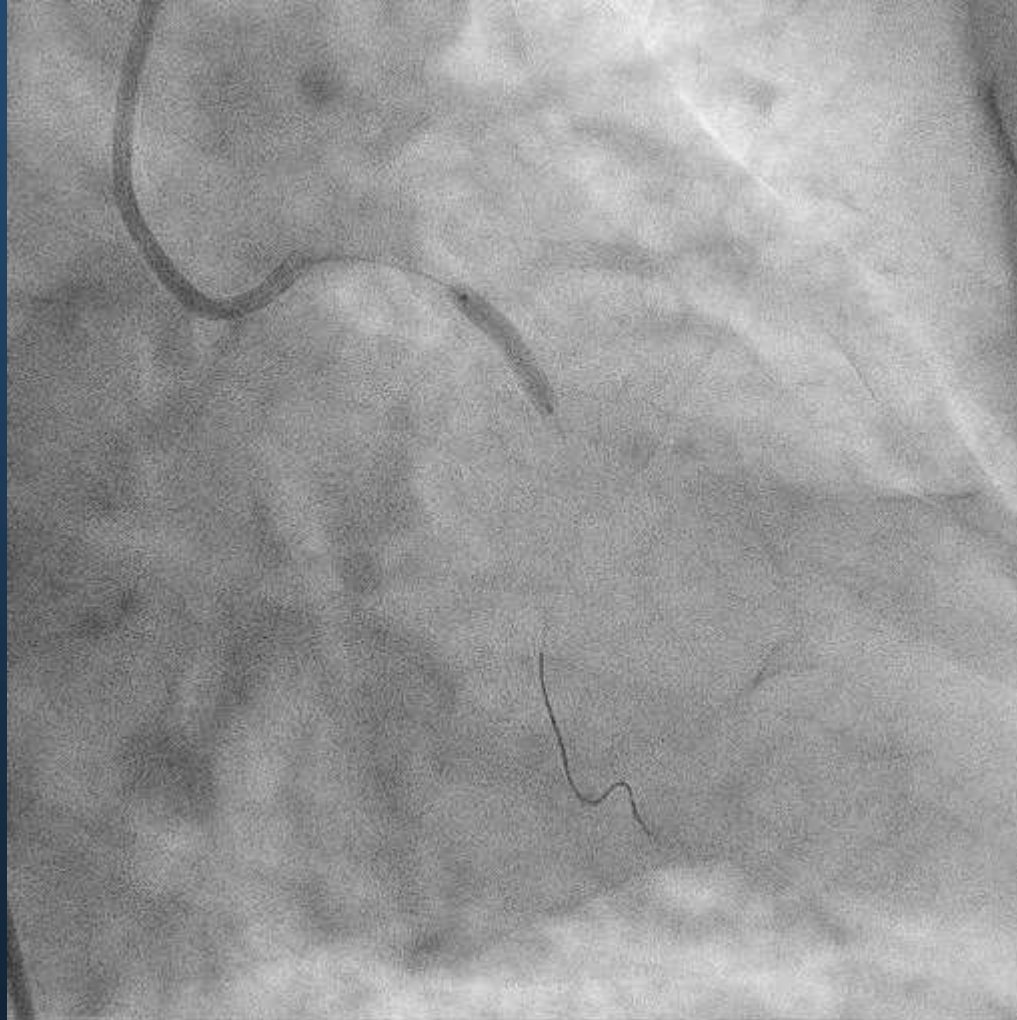


Onyx 2.75x15mm



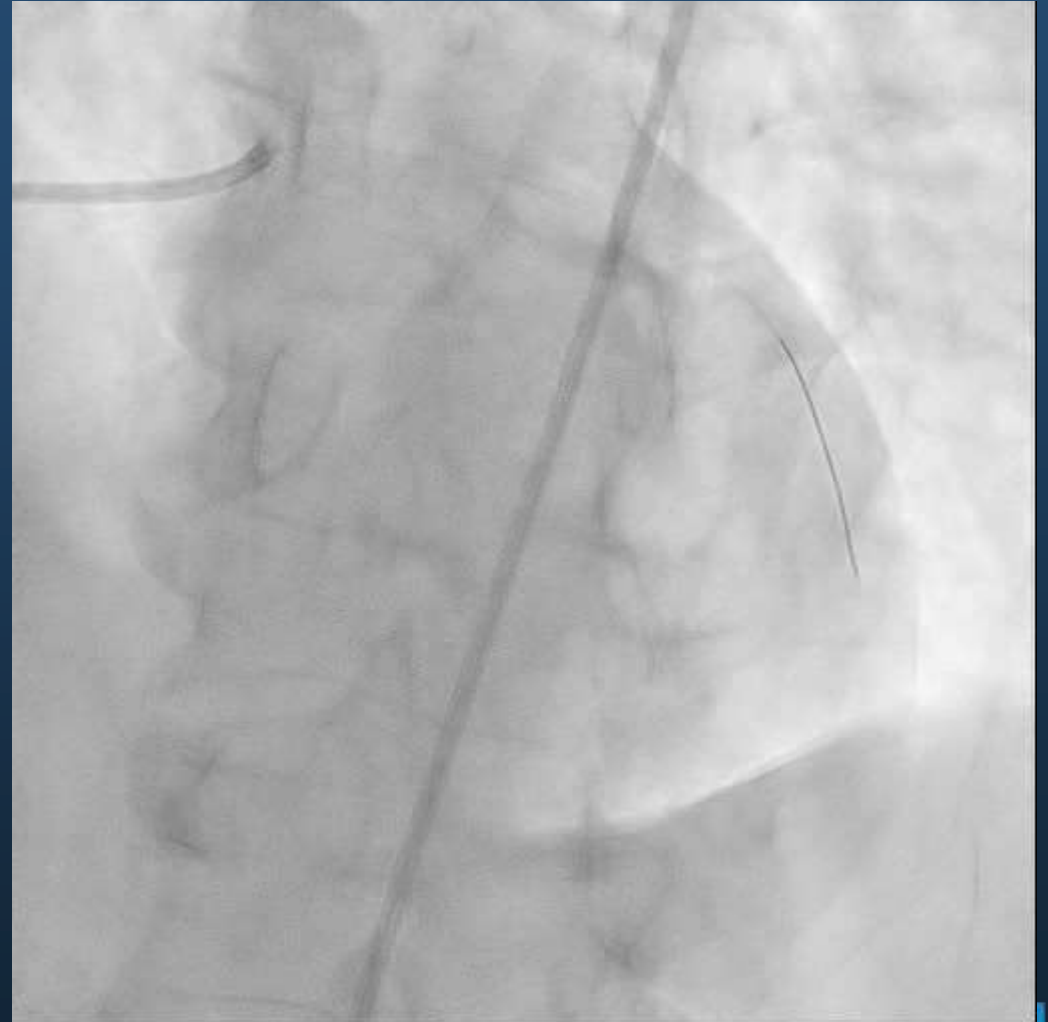
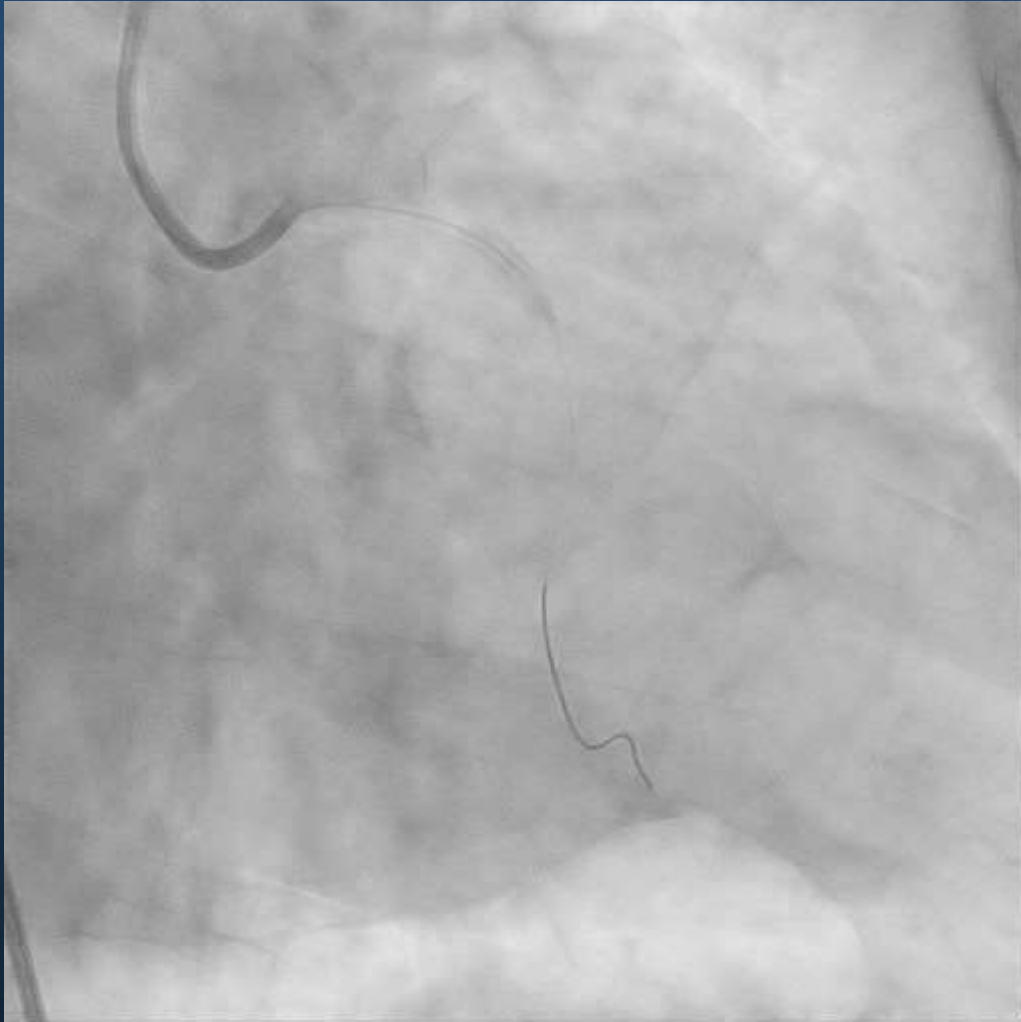
Case

Still, hypotensive, RI Onyx 2.75x15mm



Case

Final

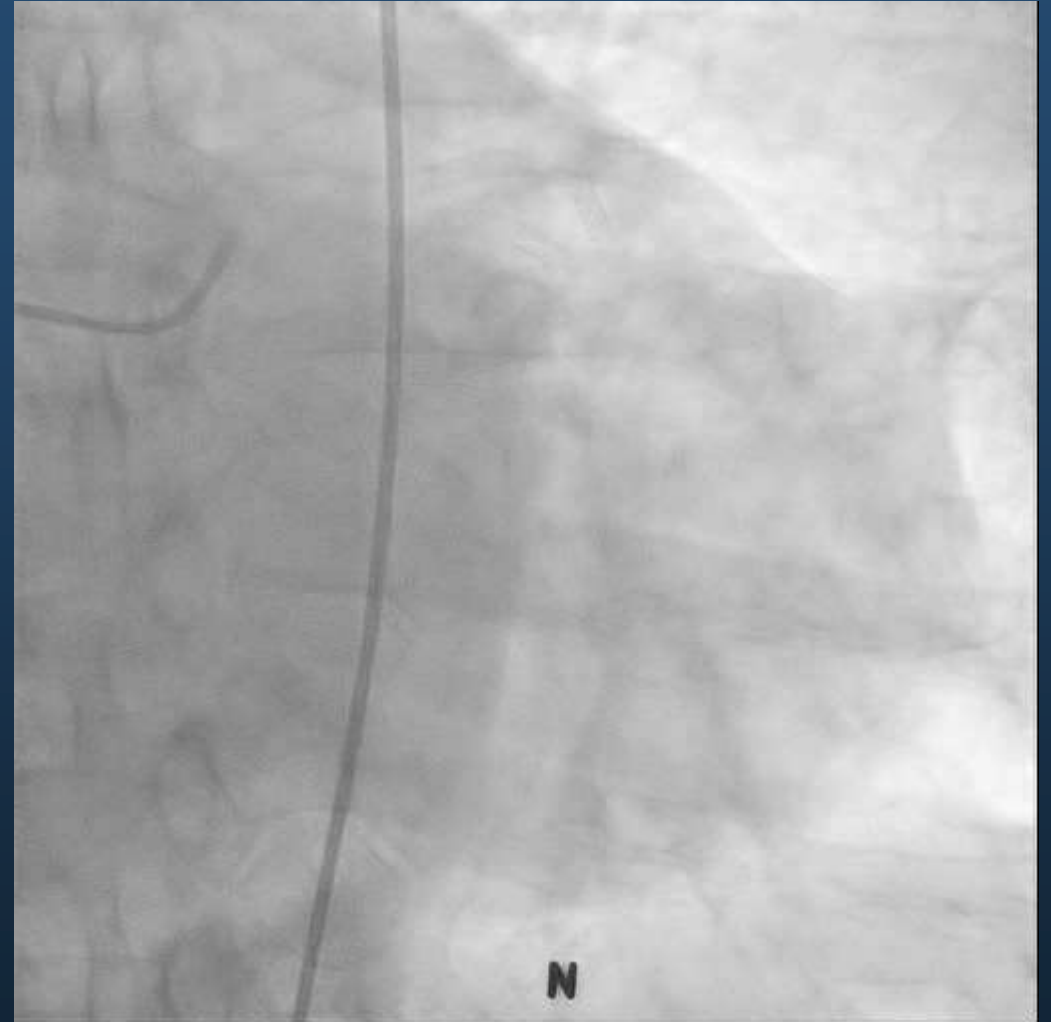
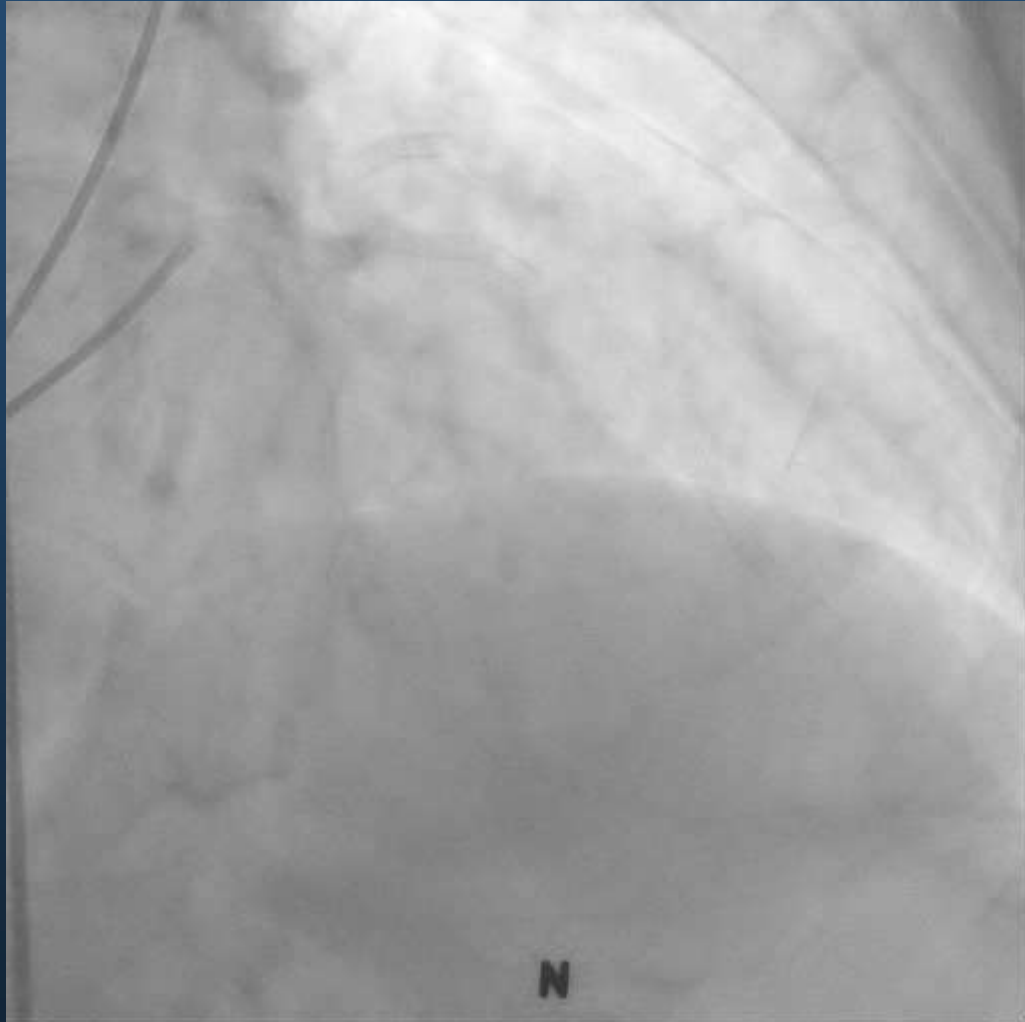


Case

- DAPT was maintained for one month
- Changed to Clopidogrel single → thrombocytopenia progressed
- Currently on Aspirin qod by hematologist
- Admitted to evaluate PAD

Case

1YR F/U CAG



Case

- M/77
- Present illness
 - Exertional chest pain with DOE, 1-2YA
 - TMT positive, admission for CAG
- Past medical history
 - HTN
 - PAF

Case

pdLAD diffuse tight stenosis

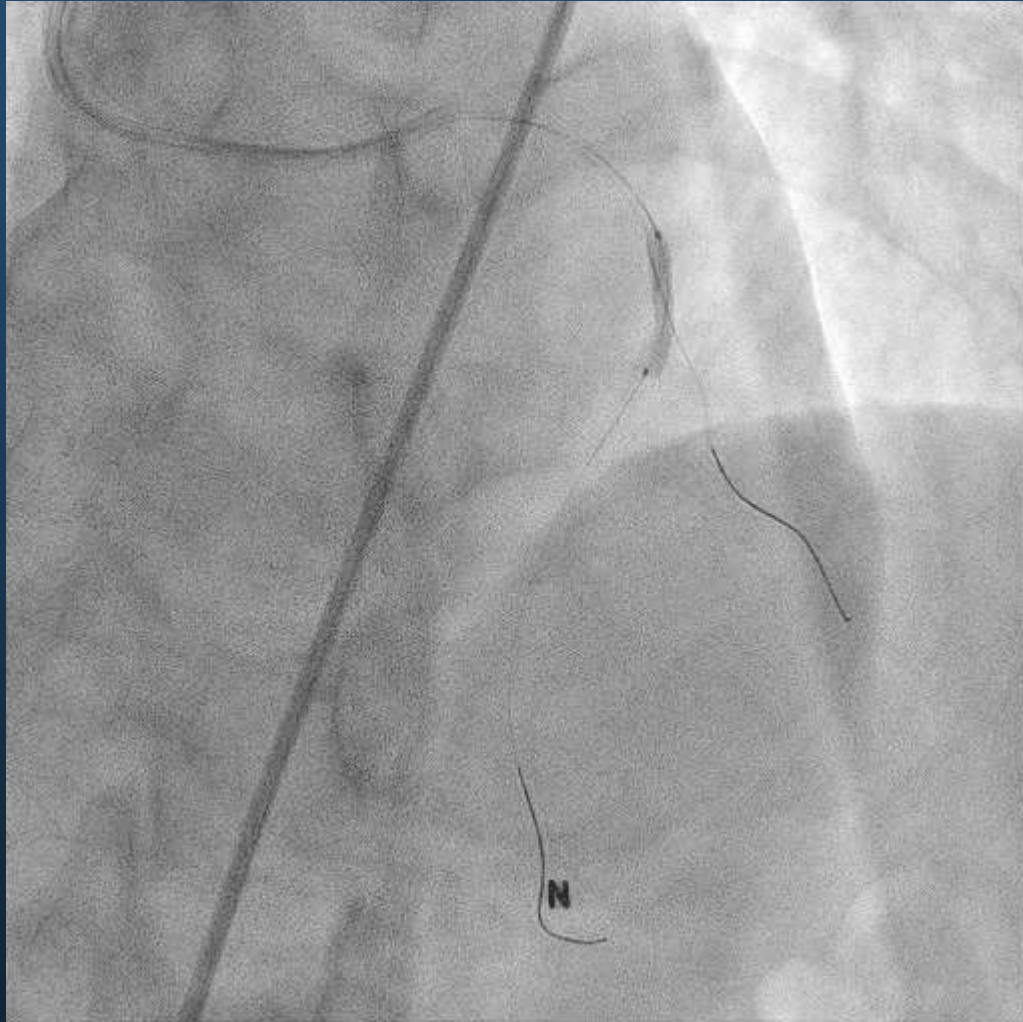


RCA some disease

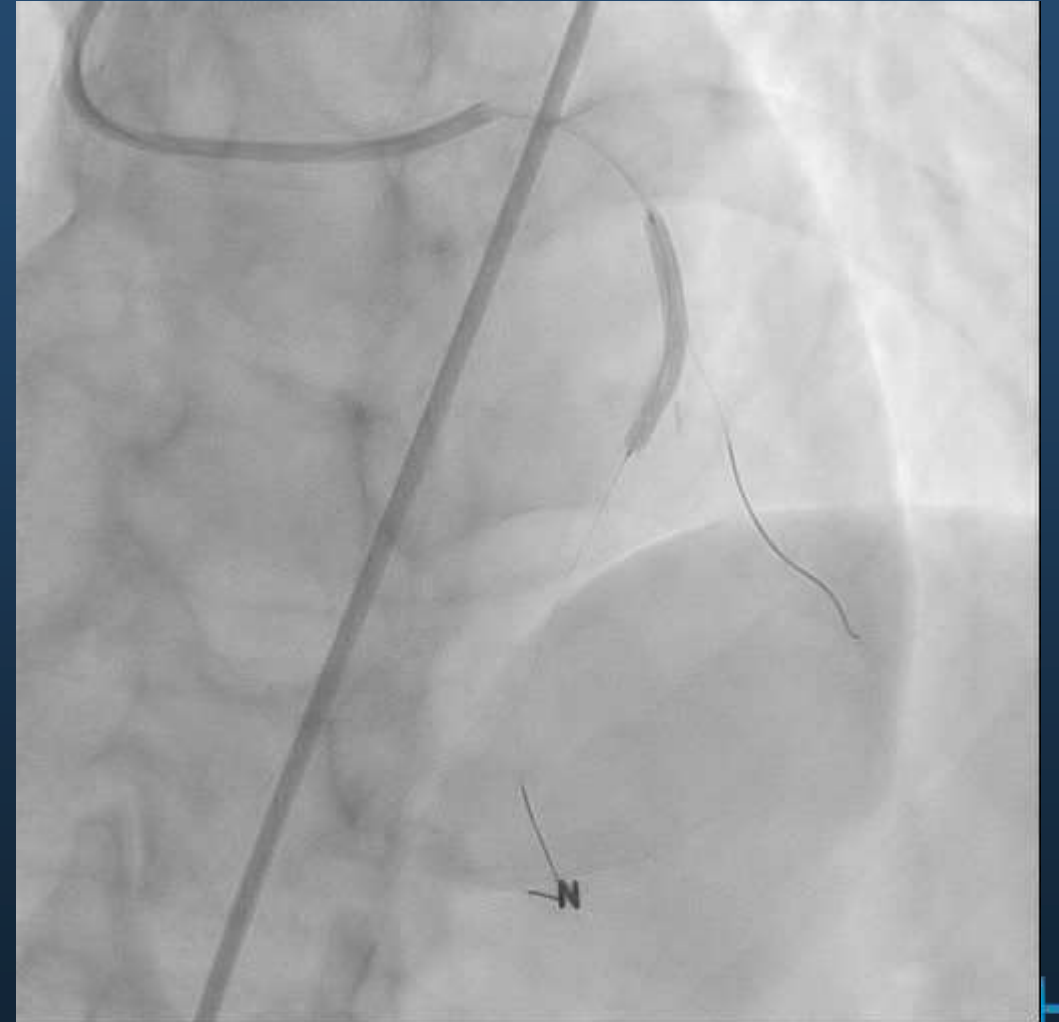


Case

POBA with 2.5x20mm

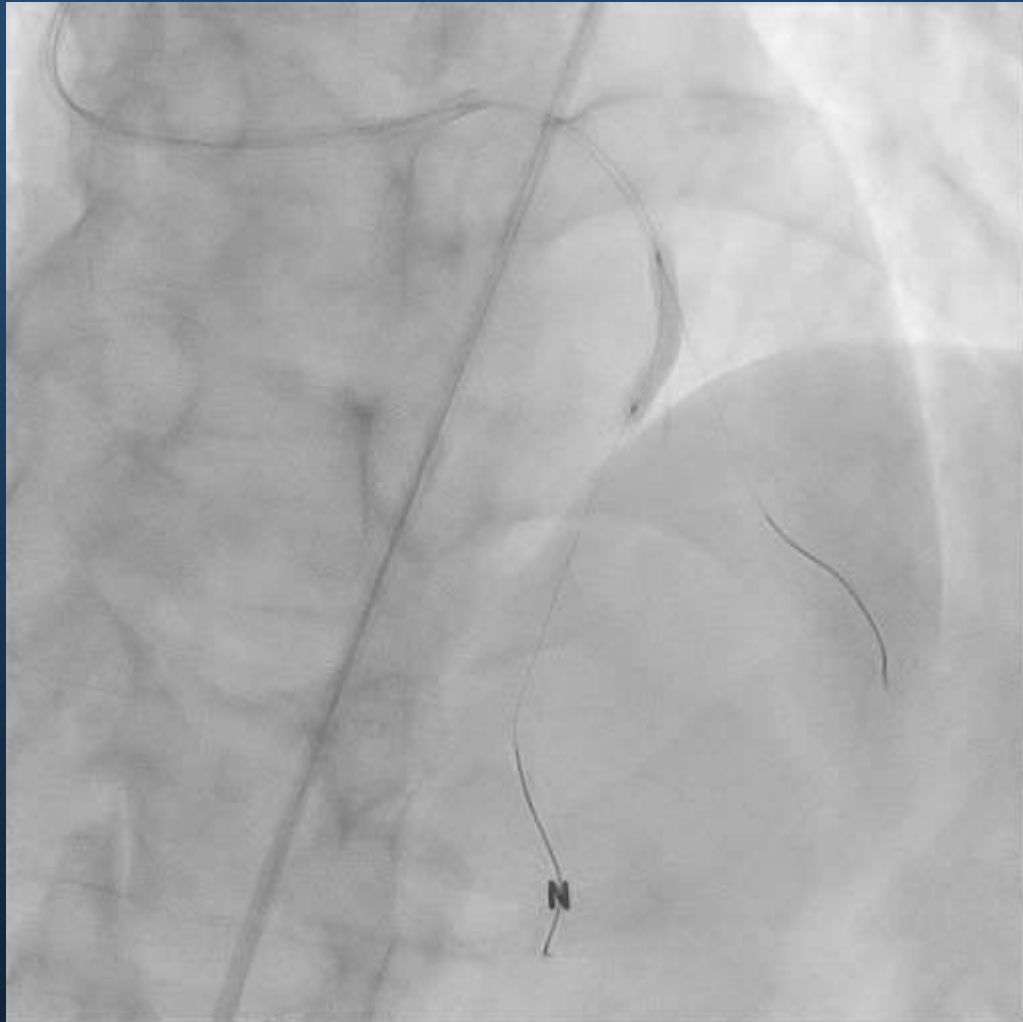


Onyx 2.5x30mm

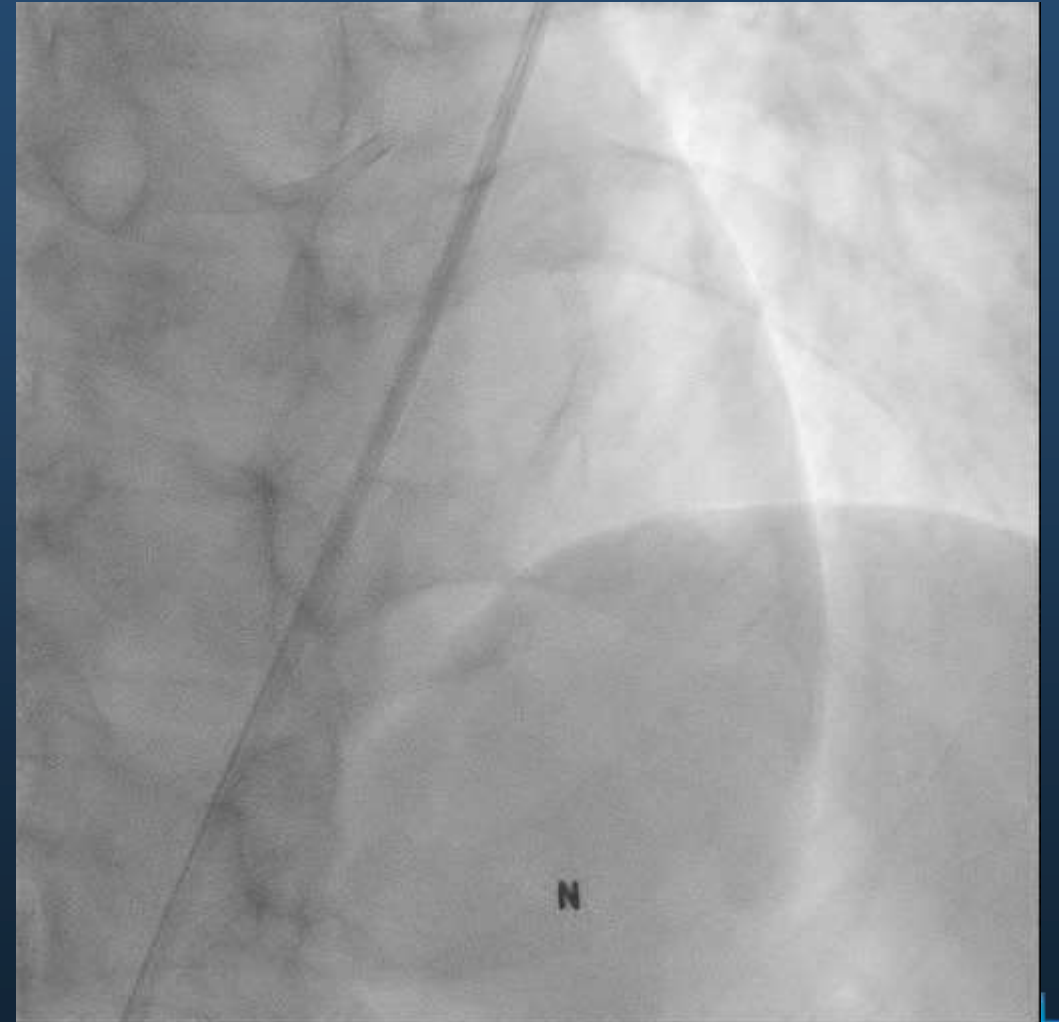


Case

Adjunctive ballooning after rewiring



Final



Case

- DAPT + DOAC was maintained for one month (enrolled in Onyx One Trial)
- DOAC + Clopidogrel
- After one year, DOAC single has been prescribed

Case

1YR F/U CAG



Take home message

- Shorter DAPT for patient with HBR
- Simplify PCI and minimize metal burden for patients with HBR
- Shorter DAPT duration or de-escalation strategy with Newer P2Y12 inhibitor can be a solution to mitigate high ischemic risk with HBR

Thank You for Your Attention!

26th
TCTAP **VIRTUAL**
2021