

Environnement pharmacologique des interventions c/o sujet agé



Hôpital
Pitié-Salpêtrière
AP-HP



CARDIO
RUN
2023



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12.3.4. Older adults with frailty and multimorbidity

12.3.4.1. The older person

Older adults represent an increasing proportion of ACS patients. One of the major predictors of adverse outcomes following ACS is age, but patients aged ≥ 75 years are often excluded from or under-represented in clinical trials.^{659,660} Older age is associated with frailty, multimorbidity, and a greater risk of both ischaemic and bleeding events in patients with ACS.⁶⁶¹ Hs-cTn assays have an excellent diagnostic performance in the older person, but the specificity of the test is lower than in younger patients, and elevated cTn levels are more commonly associated with conditions other than ACS in older patients.⁶⁶²

There are limited data on the optimal management of older adults with ACS.⁶⁶³ A small RCT enrolling older patients (≥ 80 years) with NSTEMI-ACS reported the superiority of an invasive vs. a conservative strategy in the reduction of the composite of MI, need for urgent revascularization, stroke, and death. No treatment effect was shown for all-cause death and the benefit associated with the invasive strategy was diluted with increasing age.⁶⁶⁴ In the absence of robust clinical trial evidence, decisions regarding how to manage older patients should be individualized based on patient characteristics (i.e. ischaemic and bleeding risks, estimated life expectancy, comorbidities, the need for non-cardiac surgery, quality of life, frailty, cognitive and functional impairment, patient values and preferences, and the estimated risks and benefits of an invasive strategy).

In the context of STEMI, PPCI has drastically improved outcomes for all ages. However, data are limited in the 'very old' cohort, with lack of formal assessment of frailty or comorbidity.⁶⁶⁵ In the context of CS and cardiac arrest, age is an independent predictor of mortality following PCI.^{666,667} In the absence of robust RCT data, PPCI should be considered for all patients with STEMI. When PPCI cannot be performed in a timely manner, fibrinolysis may be a reasonable strategy in these patients. For details regarding pharmacotherapy in older patients, please see the [Supplementary data online](#).






















2023 ESC Guidelines for the management of acute coronary syndromes

Antithrombotic treatment is mandatory in ACS patients, regardless of whether they undergo invasive management. Older patients are at particular risk of bleeding and other complications from acute as well as long-term antithrombotic therapies. This may partly be explained by the fact that renal function decreases with age and the prevalence of comorbidities is increased. Peri-procedural antithrombotic treatment is not different in older patients undergoing PCI but particular attention to proper dosing of antithrombotic therapies in this setting should be applied.³⁴³ Observational studies have reported frequent excess dosing of antithrombotic therapies in older patients.³⁴⁴



La crainte du risque hémorragique

HBR PCI

- 
- | | | | |
|---|---|---|---|
|  Elderly age ≥ 75 years | |  Thrombocytopenia ($< 100,000/\text{mm}^3$) |  |
|  OAC planned after PCI |  |  Cancer diagnosed or treated w/i 3 years |  |
|  Renal failure (CrCl < 40 ml/min) |  |  Stroke within 1 year or any prior ICH |  |
|  Planned surgery < 1 year |  |  Severe chronic liver disease |  |
|  Anemia (Hgb < 11 g/dl) |  |  Long-term NSAID or steroid use | |
|  Hospitalization for bleeding within 1 |  | <input type="checkbox"/> Expected DAPT non-compliance | |

Assess easily bleeding risk



A AGE

- Frail elderly >75 years*
- Advanced age >85 years*
- Life expectancy <1 year

** Must be accompanied with an additional risk factor*



B BLEEDING

- Spontaneous intracranial haemorrhage
- Recurrent gastrointestinal bleeding
- Haemoglobin <9 g/dL

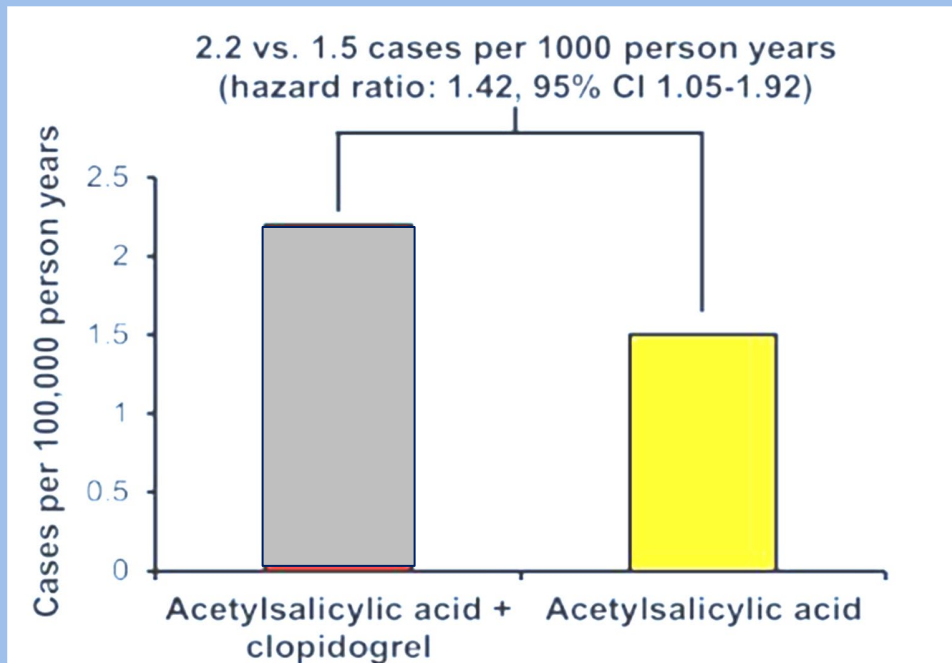


O ORGAN DYSFUNCTION

- Liver cirrhosis
- End-stage renal failure, requiring dialysis
- Bone marrow failure, e.g. severe thrombocytopenia, platelet count < 50,000/ μ L
- Stroke in the last 6 months

Risk of ICH (drugs)

ASA → ASA+clopi
HR 1.42 (1.05-1.92)



ASA+clopi → **ASA+tica**
HR 1.87 (0.98-3.48) - PLATO

ASA+clopi → **ASA+prasu**
HR 1.12 (0.58-2.15) - TRITON

Risk of ICH (patients)

Intracranial-B2LEED3S

BMI (<25 = 1 point; \geq 25 = 0 point) **Blood Pressure (high)** (Yes = 2 points; No = 0 point)

Lacune / small disease (Yes = 1 point; No = 0 point)

Elderly (\geq 75 = 1 point; <75 = 0 point)

Ethnicity (Asian = 2 point; Non-Asian = 0 point)

Disease Cardiovascular (Yes = 2 points; No = point)

Disease Cerebrovascular (Yes = 2 points; No = point)

DAPT or anticoagulant (Yes = 1 point; No = point)

Sex (Male = 1 point; Female = 0 point)

IC B2LEED3 score of \geq 5 predicts a \geq 1% annual risk of ICH



Les errements des 1^{ères} heures

Les décisions iatrogènes

1/ Les **traitements** les plus hémorragipares: lytiques et GPIs

- 1°PCI >> Thlyse
- GPI en BO seulement si absolument utile

2/ Les **erreurs** les plus hémorragipares: anticoagulants

- Pas vu que le patient était sous anticoagulant
- Les bolus d'heparine incontrôlés

3/ Les **gestes** les plus hémorragipares: non adaptés à l'âge

- fémorale plutôt que radiale
- revascularisation distale ou complète

4/ Les **suites** les plus hémorragipares: oubli de l'âge

- surdosages et/ou prolongations des anticoagulants/antiplaquettaires
- IR fonctionnelle, hématurie sur SU inutile, sepsis sur VP, chutes...



Estimation du risque global

High Ischemic Risk → specific characteristics

Factors that increase risk of bleeding

- **Patient factors**
 - Age (>65 years)
 - Low body weight (<60 kg)
 - Hypertension
 - History of bleeding (esp. within 1 y)
 - Prior stroke or intracranial bleed
 - Combined OAC and antiplatelet use
 - Concomitant NSAID or prednisone use
 - Excess alcohol consumption
 - Abnormal liver function
 - CKD (eGFR <60 mL/min)
 - Anaemia (haemoglobin <110 g/L)
 - Labile INR (TTR <60%)

Factors that increase risk of ischemic coronary events

- **Patient factors**
 - Diabetes mellitus treated with OHG or insulin
 - Current smoker
 - CKD (eGFR <60 mL/min) or PAD
 - Prior ACS
 - Prior stent thrombosis
- **Clinical presentation**
 - ACS (STEMI, NSTEMI, UA)
- **Angiographic factors**
 - Multi-vessel disease
 - Multiple (≥3) stents implanted
 - Stenting of a bifurcation lesion
 - Total stent length >60 mm
 - Left main or proximal LAD stenting
 - Chronic occlusion intervention
 - Bioabsorbable vascular scaffold

Les meds et leurs doses

1/ HBPM IV (0,5mg/kg) > HNF IV (adaptée au poids/ACT sans répétition aveugle)

2/ pas de prolongation d'anticoagulation excessive (IR)

3/ pas de trithérapie

4/ aspirine (250 / 75)

5/ clopidogrel (600 / 75)

6/ prasugrel (30 / 5)

7/ ticagrelor (90*2)

8/ GPI (bolus only)

9/ AOD (apixaban 2,5*2)

10/ SAPT 1mois (clopidogrel 75)



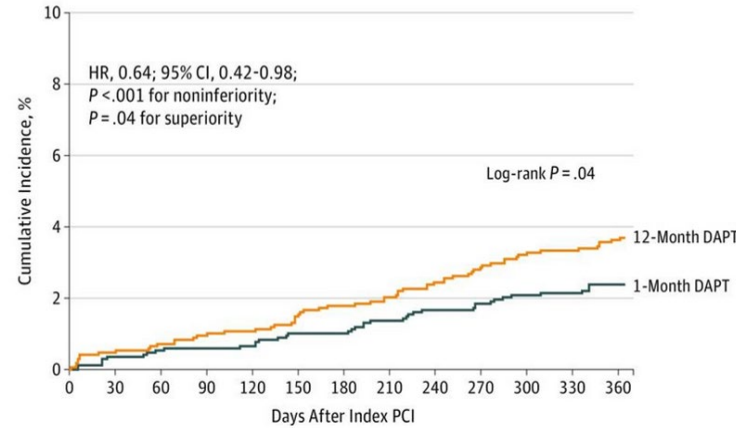
Clopidogrel seul à M1

Stopping ASA @ 1-3 month!

CLOPIDOGREL

STOP-DAPT-2

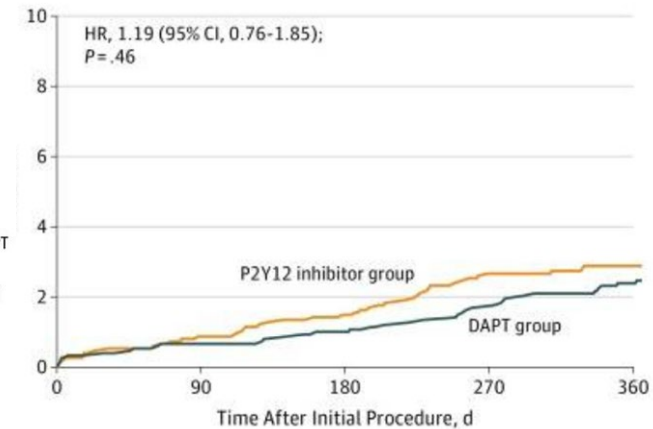
Primary end point (composite of cardiovascular death, MI, definite stent thrombosis, ischemic and hemorrhagic stroke, or TIMI major or minor bleeding)



H. Watanabe, JAMA. 2019 Jun 25;321(24):2414-2427

SMART-CHOICE

Composite events (primary outcome)

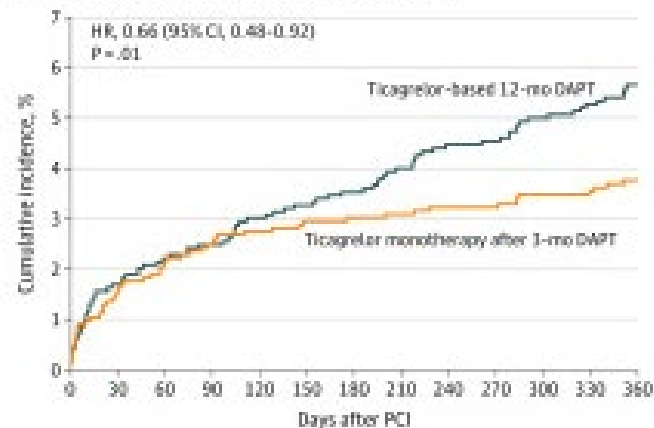


JY Hahn - JAMA. 2019 Jun 25;321(24):2428-2437

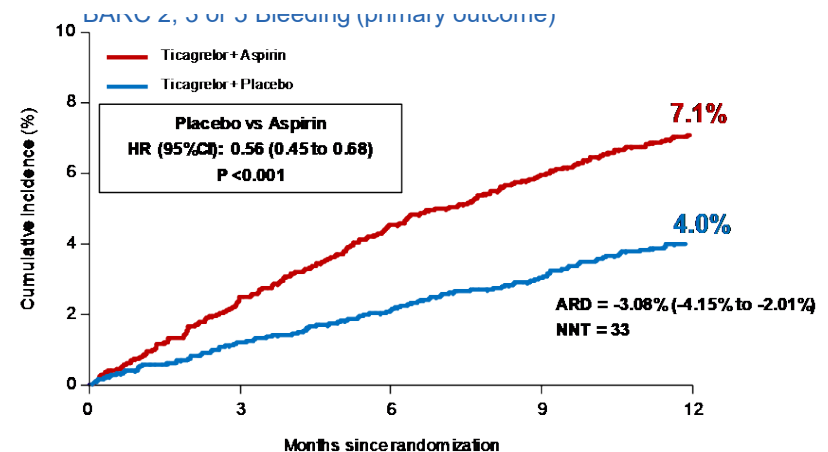
TICAGRELOR

TICO-STEMI

Primary outcome of the net adverse clinical event



BK Kim et al. JAMA 2020;323:2407-2416

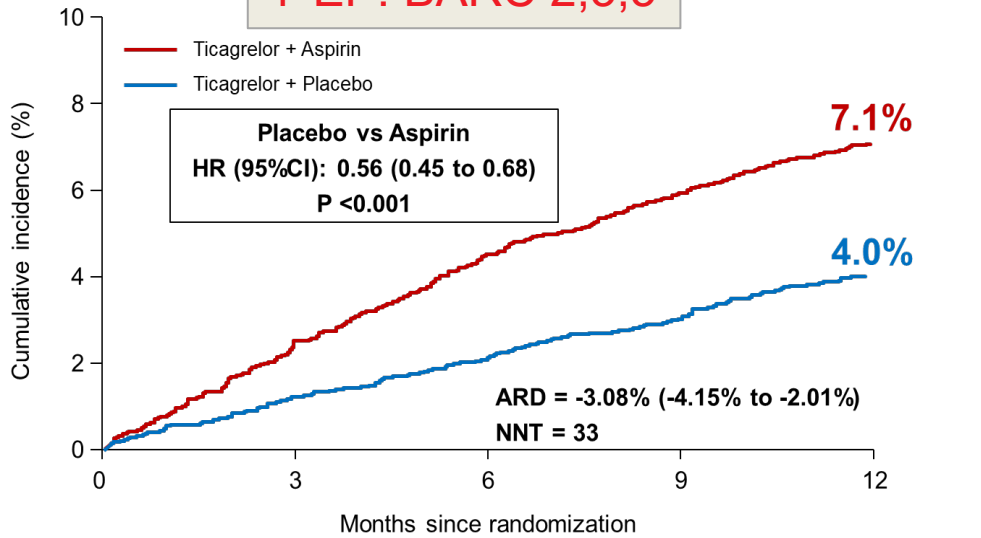


Mehran R et al. NEJM 2019

TWILIGHT

(3m^{ths} post-PCI)

1°EP: BARC 2,3,5



N=7119
HBR/HBI
DB

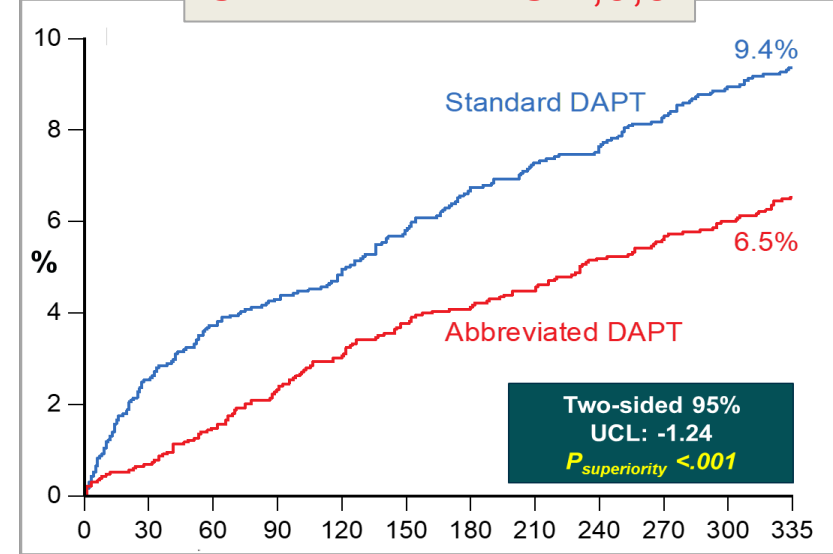
Mehran R. NEJM 2019

MASTER-DAPT

(1mth post-PCI)



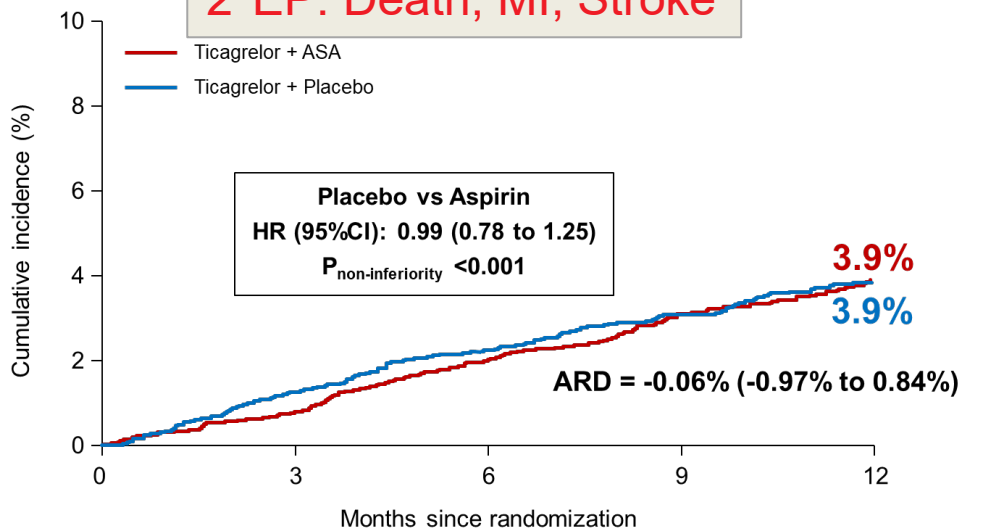
Co-1°EP: BARC 2,3,5



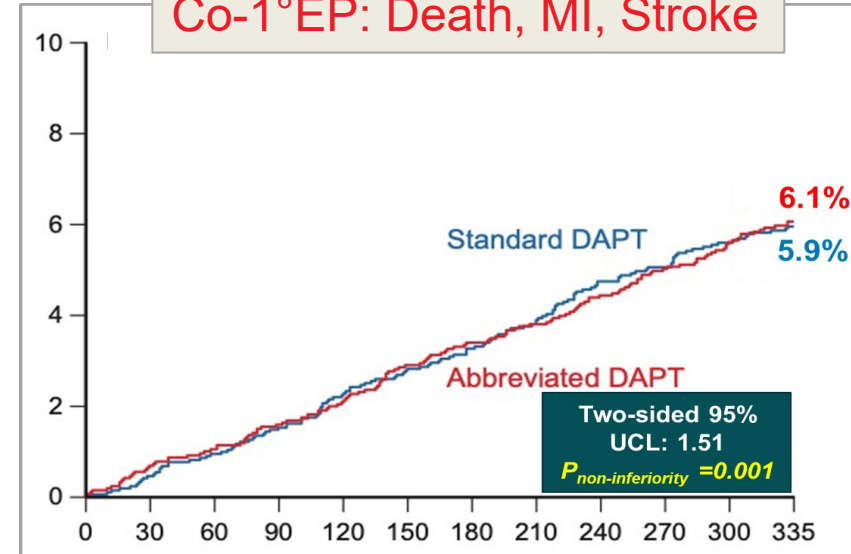
N=4579
HBR
OL

Valgimigli M. NEJM 2021

2°EP: Death, MI, Stroke

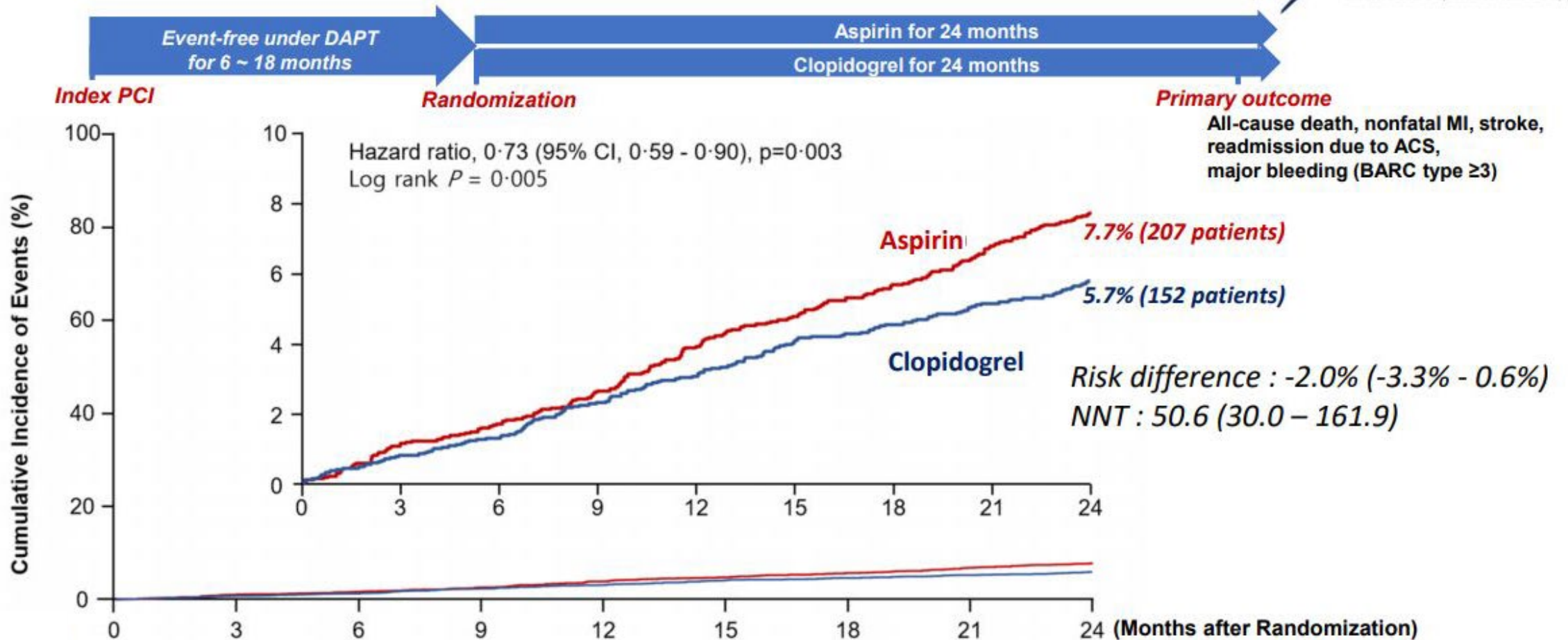


Co-1°EP: Death, MI, Stroke



Clopidogrel > aspirine

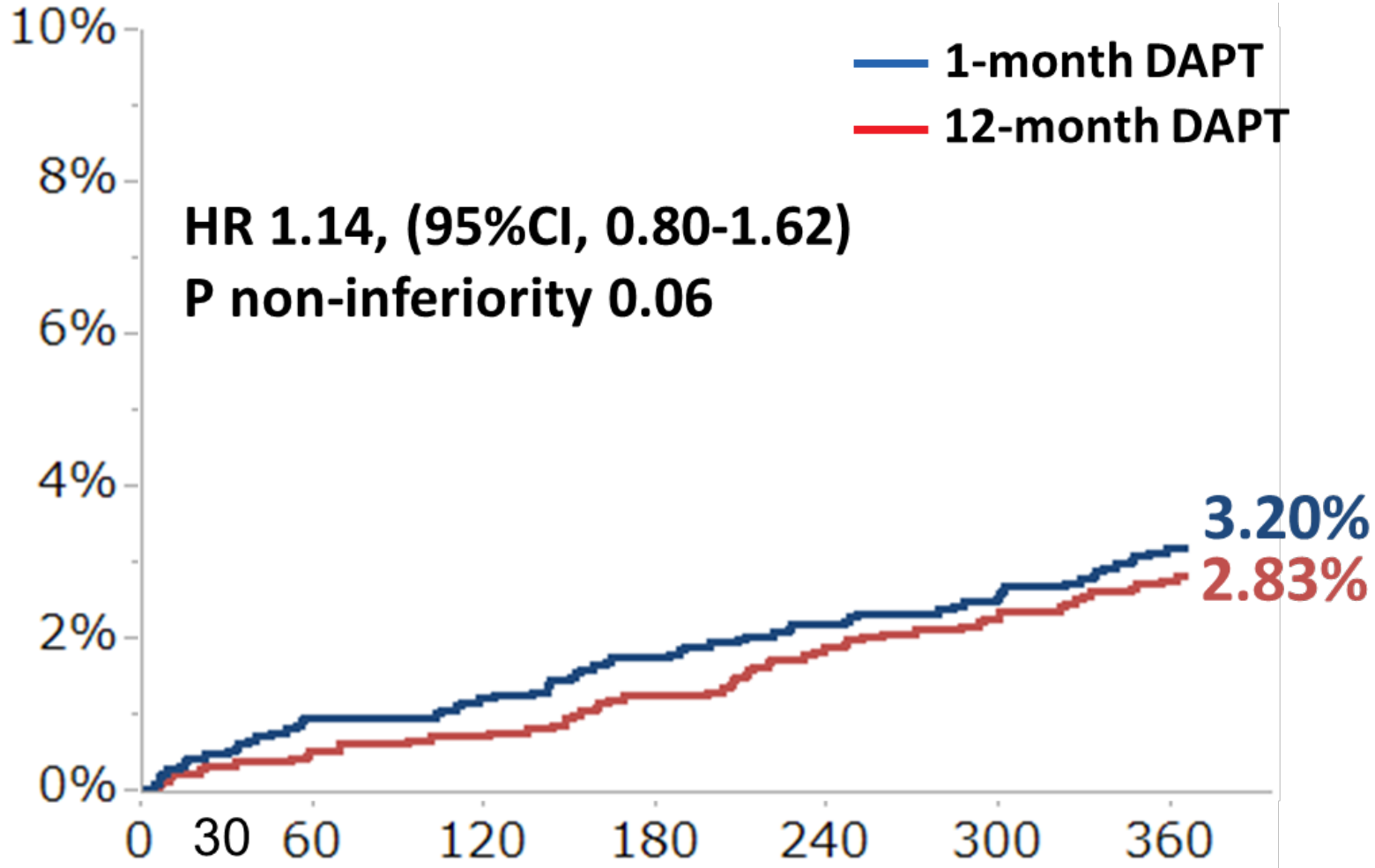
Primary Outcome





Clopidogrel seul à M1
→ Discuter l'exception SCA

1° EP: CV death/MI/ST/Stroke/TIMI major/minor bleeding



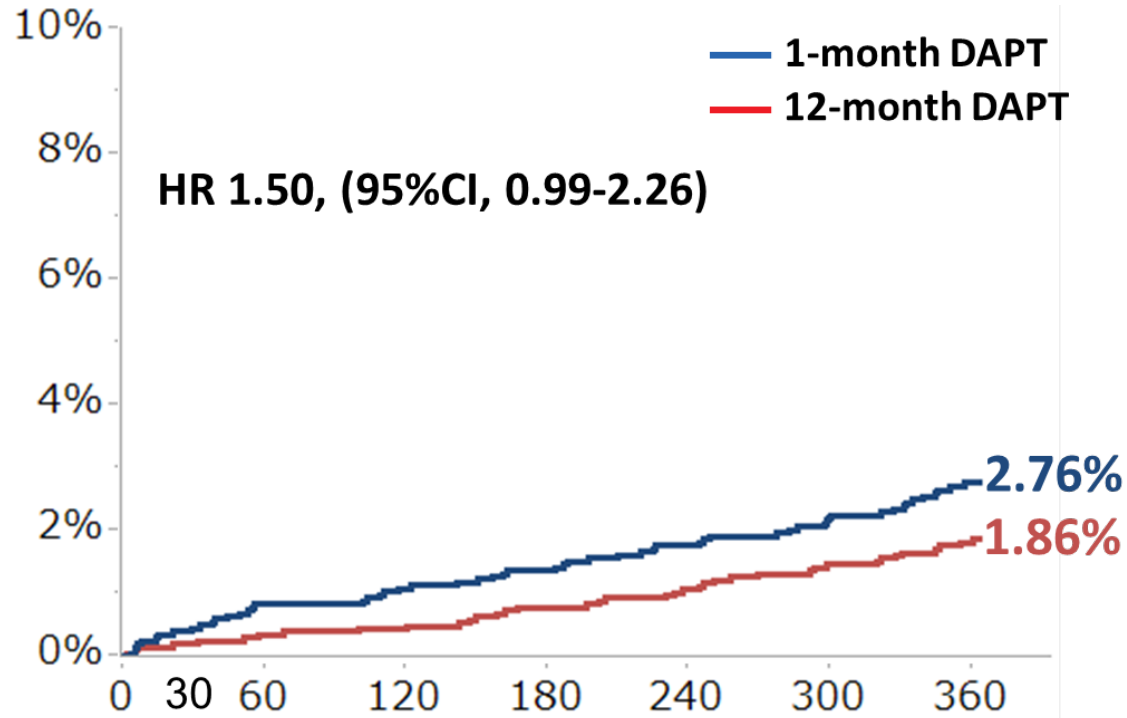
No. at risk

12-month DAPT
 1-month DAPT

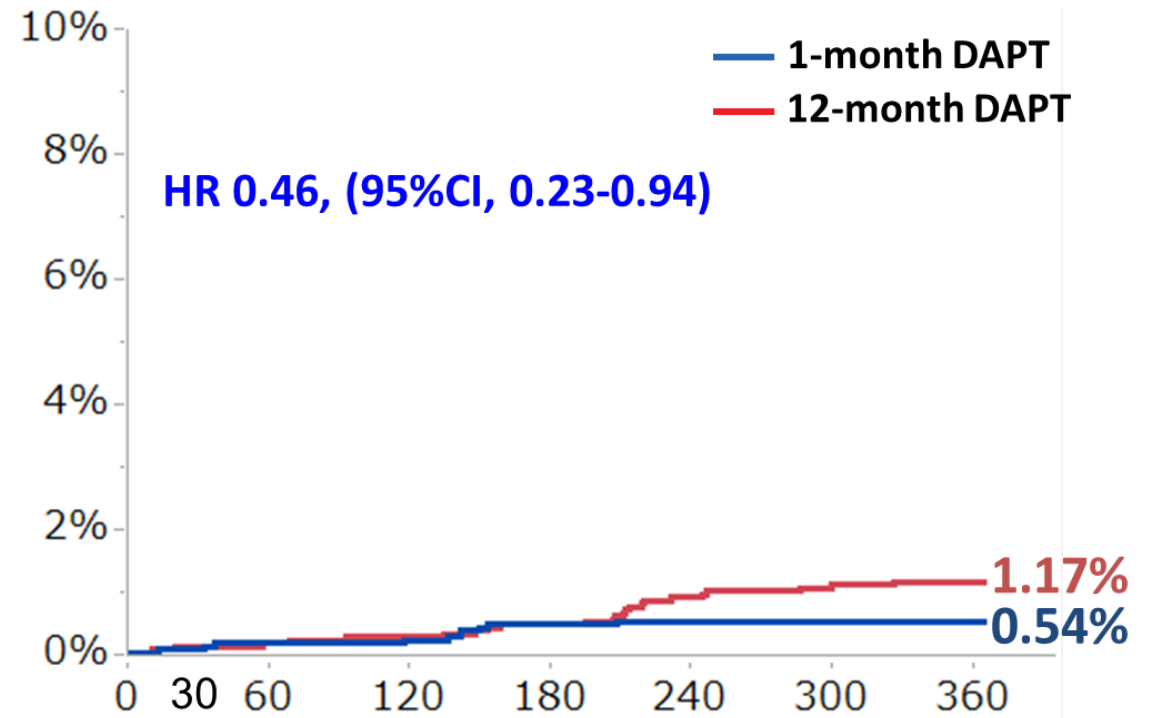
2078	2070	2055	2048	2036	2021	2010	1581
2058	2047	2028	2021	2007	1993	1982	1606

Secondary endpoints

CV death/MI/ST/Stroke



TIMI major/minor bleeding



Conclusions



IATROGENIE
EXCES DE CONFIANCE

PRIMUM NON NOCERE