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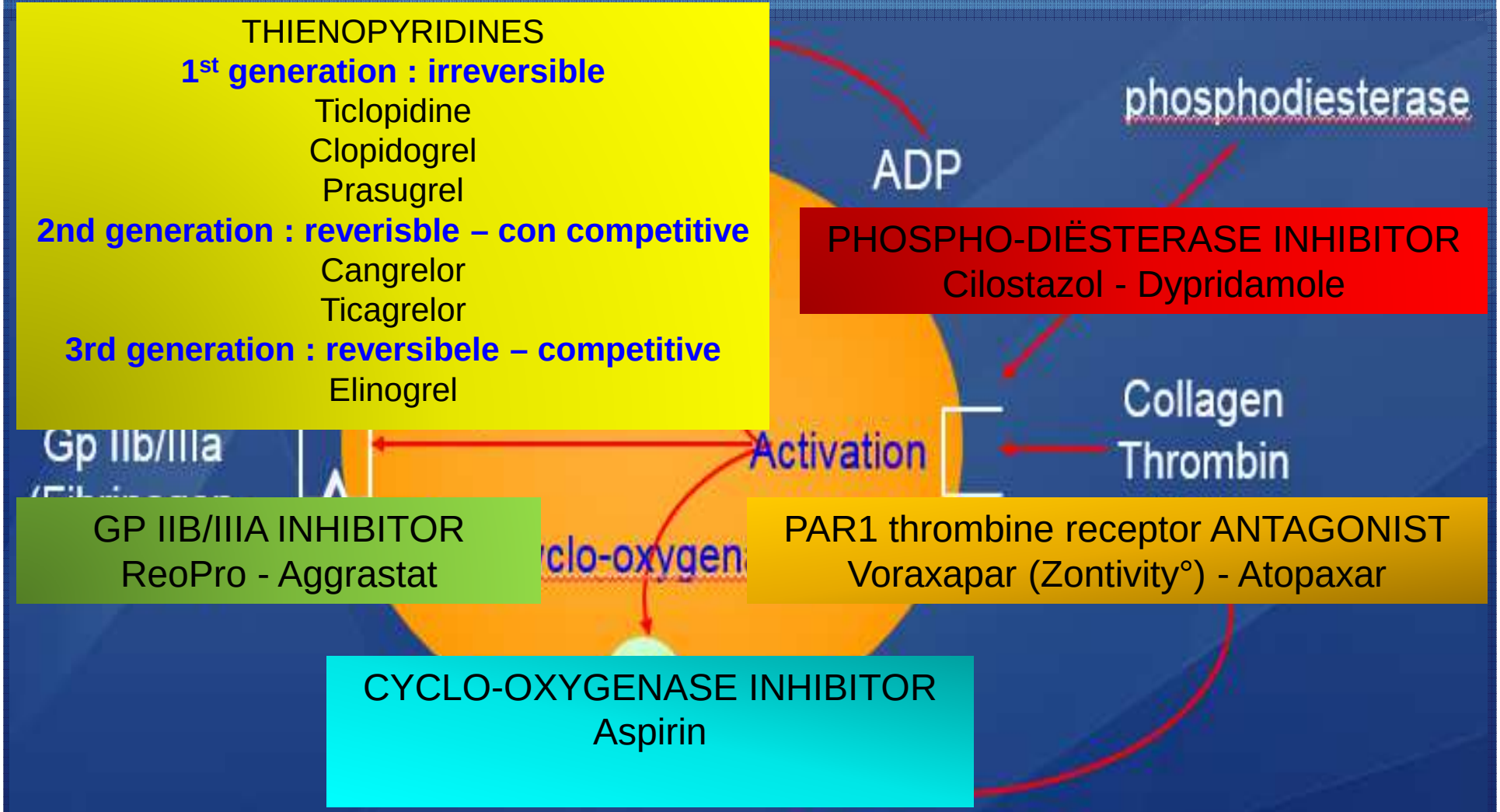
Anti-Platelet Therapy : who needs it & what to prescribe?

Koen Deloose, MD

Anti-platelet therapies : targets

THIENOPYRIDINES
1st generation : irreversible
Ticlopidine
Clopidogrel
Prasugrel
2nd generation : reverisble – con competitive
Cangrelor
Ticagrelor
3rd generation : reversibele – competitive
Elinogrel



PHOSPHO-DIËSTERASE INHIBITOR
Cilostazol - Dypridamole

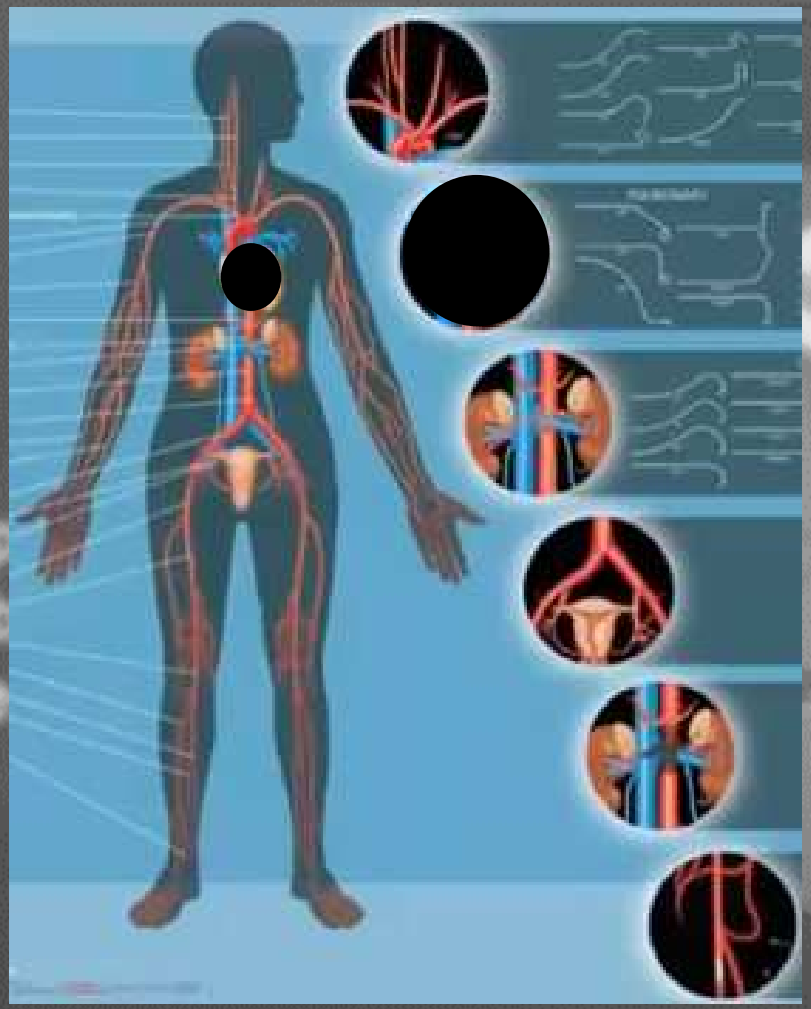
GP IIB/IIIA INHIBITOR
ReoPro - Aggrastat

PAR1 thrombine receptor ANTAGONIST
Voraxapar (Zontivity°) - Atopaxar

CYCLO-OXYGENASE INHIBITOR
Aspirin

Schafer AI. *Am J Med* 1996;101:199–209

Anti-platelet therapies : targets



CYCLO-OXYGENASE INHIBITOR
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1st generation : irreversible
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PHOSPHO-DIËSTERASE INHIBITOR
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Schafer AI. *Am J Med* 1996;101:199–209

Role of Anti-platelet therapies

- **Primary prevention**
- **Secondary prevention**

  - The cardiovascular patient

  - (Endo)vascular therapy

Role of Anti-platelet therapies

- **Primary prevention**

Physicians' **H**ealth **S**tudy Research Group.*NEJM 1989;321:129-35*

22,071 men randomized to aspirin (325mg every other day) followed for an average of 5 years

End point	Relati	
Myocardial inf		
		0.43
	(0.91-1.59)	0.20
	1.22 (0.93-1.60)	0.15

Aspirin significantly reduces the MI-risk but not the stroke-risk in men

Role of Anti-platelet therapies

- **Primary prevention**

Womens' **H**ealth **S**tudy. *Ridker P et al. NEJM 2005;352:1293-304*

39,876 women randomized to aspirin (100 mg every other day) or placebo for an average of 10 years

Aspirin significantly reduces the risk of stroke but not this of MI in women

Role of Anti-platelet therapies

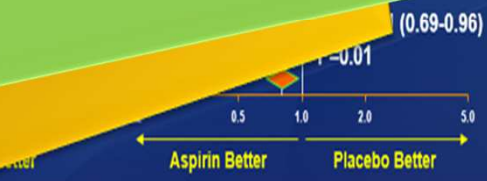
- **Primary prevention**

Physicians' Health Study Research Group. *NEJM* 1989;321:129-35

22,071 men randomized to aspirin

followed for an

Overall conclusion : Aspirin is recommended for men & women whose 10-year risks for CVD is >10 % over 10 years



Role of Anti-platelet therapies

- **Primary prevention**

  Optimal dose

Antithrombotic Trialist Collaboration. *BMJ* 2002;324:71-86

Role of Anti-platelet therapies

- **Primary prevention**

No data to support the role of other anti-platelet agents in primary prevention

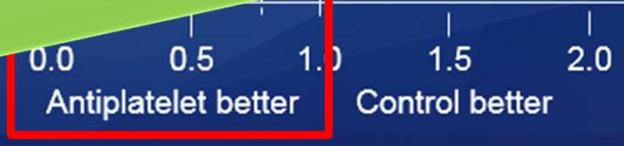
Antithrombotic Trialist Collaboration. *BMJ* 2002;324:71-86

Role of Anti-platelet therapies

- **Secondary prevention in CV patient**

Effect of Aspirin on vascul **h)**

There is strong evidence to recommend Aspirin (75-162 mg daily) if known CHD/ASVD

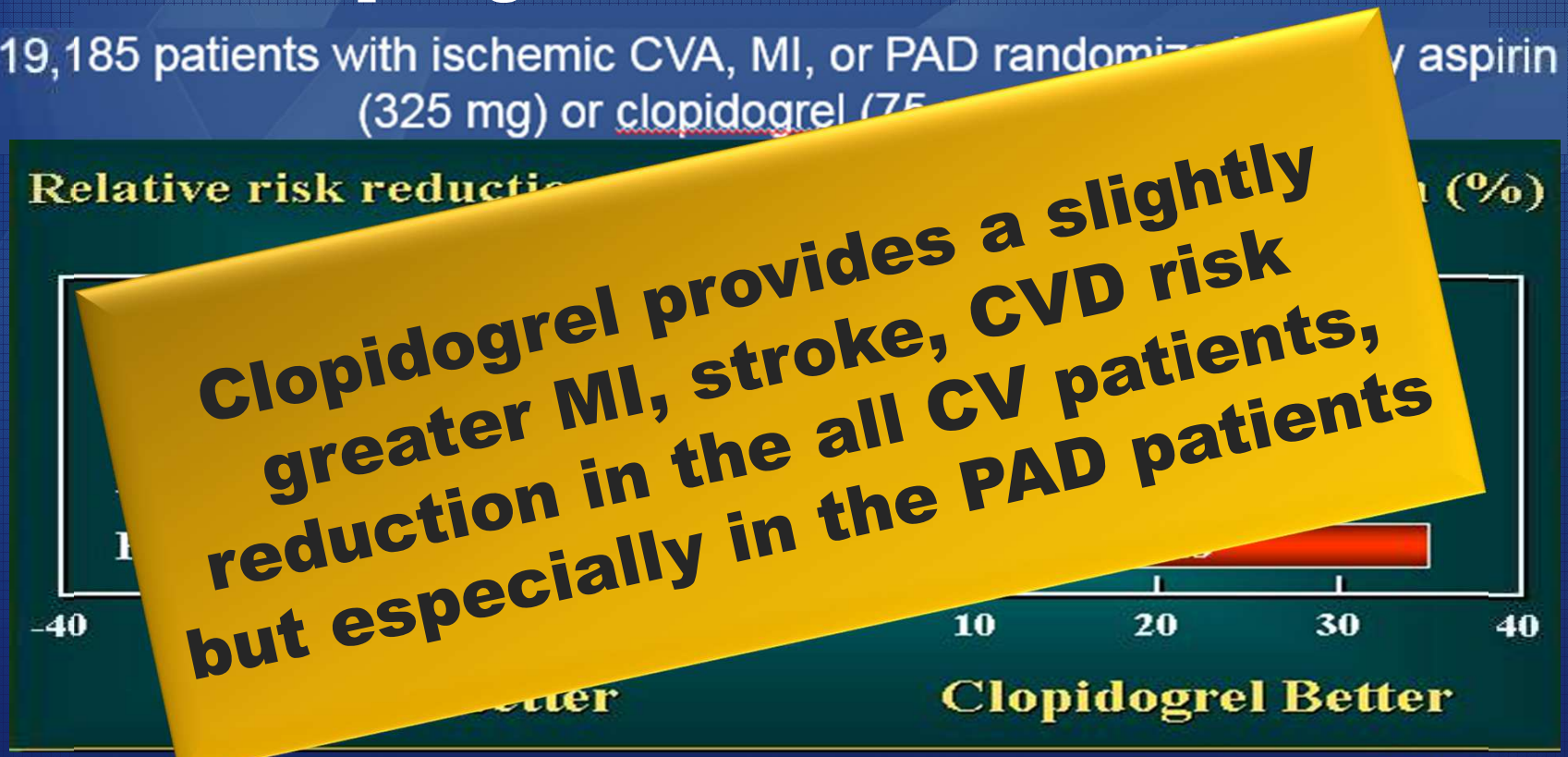


Antithrombotic Trialist Collaboration. *BMJ* 2002;324:71-86

Role of Anti-platelet therapies

- **Secondary prevention in CV patient @ risk**

Effect of Clopidogrel on vascular events



CAPRIE Steering Committee. *Lancet* 1996;348:1329-39

Role of Anti-platelet therapies

- **Secondary prevention in CV patient @ risk**

Effect of Aspirin + Clopidogrel on vascular events :

CHARISMA trial : 15,603 patients with multiple CV risk factors or known CVD randomized to aspirin (75-162 mg) [illegible] 5-162 mg) & clopidogrel (75 mg) for a mea[illegible]

Routine DAP offers no long term benefit

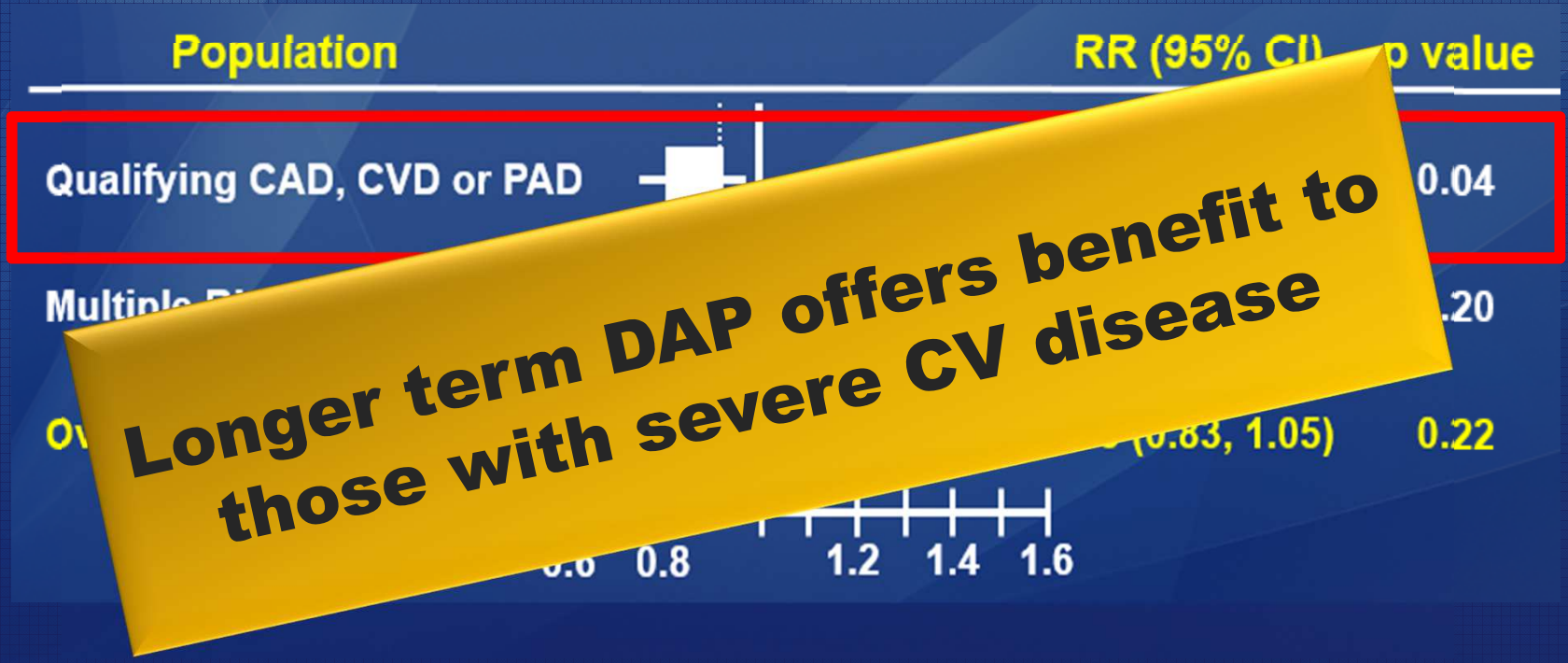
Bhatt DL et al. *NEJM* 2006;354:1706-17

Role of Anti-platelet therapies

- **Secondary prevention in CV patient @ risk**

Effect of Aspirin + Clopidogrel on vascular events :

CHARISMA trial :



Bhatt DL et al. *NEJM* 2006;354:1706-17

Role of Anti-platelet therapies

- **Secondary prevention post (endo) vascular R/**

In contrast to the coronary field, there is no evidence for the optimal anti-platelet therapy and duration after peripheral interventions.

Decision is based on "good clinical practice", mainly derived from the coronaries or device studies.

Role of Anti-platelet therapies

- **Secondary prevention post (endo) vascular R/**

Recommendations	Class[a]	Level[b]
Antiplatelet therapy with aspirin is recommended in all patients with angioplasty for LEAD to reduce the risk of systemic vascular events.	I	C
Dual antiplatelet therapy with aspirin and a thienopyridine for at least one month is recommended after infrainguinal bare-metal-stent implantation.	I	C

European Society of Cardiology guidelines 2011

Role of Anti-platelet therapies

- **Secondary prevention post (endo) vascular R/**

MIRROR : 1yr results RCT post endo R/ for PAD

80 patients, 1 : 1 randomization DAPT vs ASA mono

6 months : significant in favor of DAPT for TLR

12 months : no significant difference in TLR anymore

Strobl F et al; JEVT 2013;20:699–706

Role of Anti-platelet therapies

- **Secondary prevention post (endo) vascular R/**

CHEST Supplement

ANTITHROMBOTIC THERAPY AND PREVENTION OF THROMBOSIS, 9TH ED: ACCP GUIDELINES

Antithrombotic Therapy in Peripheral Artery Disease

Antithrombotic Therapy and Prevention of Thrombosis, 9th ed: American College of Chest Physicians Evidence-Based Clinical Practice Guidelines

Pablo Alonso-Coello, MD, PhD; Sergi Bellmunt, MD; Catherine McGorrian, MBBCh, BAO; Sonia S. Anand, MD, PhD; Randolph Guzman, MD, RVT; Michael H. Criqui, MD, MPH; Elie A. Akl, MD, MPH, PhD; Per Olav Vandvik, MD, PhD; Maarten G. Lansberg, MD, PhD; Gordon H. Guyatt, MD, FCCP; and Frederick A. Spencer, MD

For patients undergoing peripheral artery percutaneous transluminal angioplasty with stenting, *we suggest single rather than dual antiplatelet therapy*

Chest 2012; 141(2)(Suppl):e669S–e690S

Role of Anti-platelet therapies

- **Secondary prevention post (endo) vascular R/**

Dual antiplatelet therapy can be considered current state of the art after infrainguinal stent implantation

because it is …

*** supported by a multitude of data from the coronary field**
*** applied in nearly all major endovascular centers and ongoing stenting trials and**
*** propagated by key opinion leaders all over the world**

Role of Anti-platelet therapies

- **Secondary prevention post (endo) vascular R/**

POBA / PTA-DCB / BMS

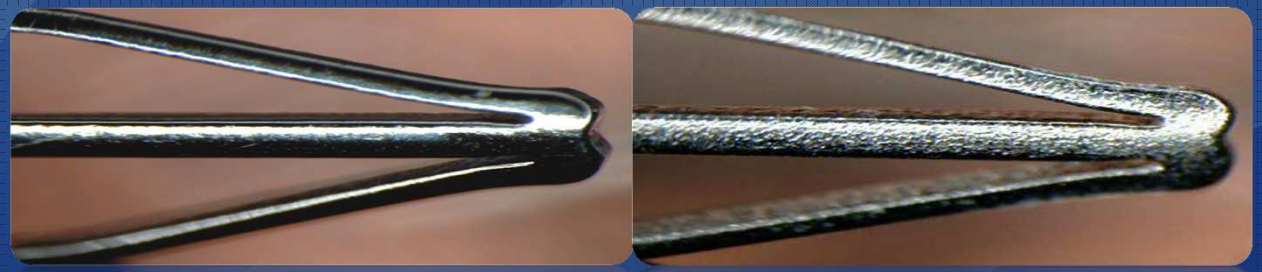


DAPT 1 month, thereafter ASA lifelong

Role of Anti-platelet therapies

- **Secondary prevention post (endo) vascular R/**

DES ATK

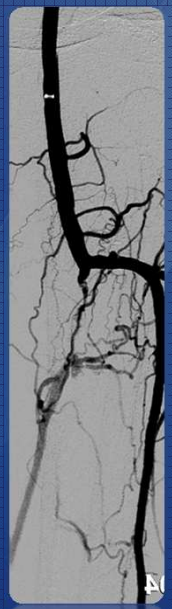


DAPT ≥ 2 month, thereafter ASA lifelong

Zilver PTX trial : Dake M et al; JEVT 2011; 18:613–623

Role of Anti-platelet therapies

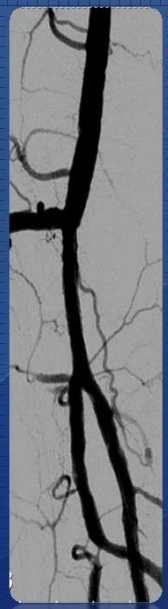
- **Secondary prevention post (endo) vascular R/**



DES BTK

3 randomized studies:

Achilles (Cypher - Sirolimus): DAPT 6 months
Destiny (Xcience V - Everolimus): DAPT 12 months
Yukon (Sirolimus): DAPT 6 months



DAPT ≥ 6 month, thereafter ASA lifelong

Role of Anti-platelet therapies

- **Secondary prevention post (endo) vascular R/**

Covered stents PAD

DAPT ≥ 6 month, thereafter ASA lifelong

Conclusion

- **Only Aspirin** is proven to play an important role in primary prevention of CVD, especially in higher risk patients
- There is a **level Ia evidence** to recommand **Aspirin** as a secondary prevention in known CV-patients
- **Longer term DAPT** offers only benefit in secondary prevention in severe CV disease
- There is weaker evidence to recommand **DAPT post (endo)vascular intervention** as secondary prevention.

Conclusion

- Based on world-wide (KOL) experiences and coronary/peripheral device trials, **DAPT** is recommended for 1 (POBA; DCB; BMS) up to 6-12 months (DES; Covered stents).