Medical therapy after angioplasty / stenting

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Disclosure

Speaker name: Erich Minar

I do not have any potential conflict of interest
Antithrombotic treatment in PAD

• Primary prophylaxis

• Secondary prophylaxis

Spontaneous course
- local events
- general cardiovascular events

Revascularization
- Endovascular therapy
- Vascular surgery
Antithrombotic treatment in PAD

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Aspirin for the Prevention of Cardiovascular Events in Patients With Peripheral Artery Disease
A Meta-analysis of Randomized Trials

18 trials involving 5269 individuals were identified

5269 participants - cardiovascular events were experienced by
251/2823 (8.9%) patients taking aspirin (± dipyridamole)
269/2446 (11.0%) in the control group

**RR: 0.88; 95% CI 0.76-1.04**
Relative risk reduction in MI, stroke, or vascular death (%)

- All Patients: 8.7% reduction, p = 0.043
- Stroke pts: 7.3% reduction
- MI pts: 3.7% reduction, p = 0.0028
- PVD pts: 23.8% reduction

Aspirin Better vs. Clopidogrel Better
For secondary prevention of cardiovascular disease in patients with symptomatic PAD (including patients before and after peripheral arterial bypass surgery or percutaneous transluminal angioplasty), we recommend long-term aspirin (75-100 mg/d) or clopidogrel (75 mg/d) (Grade 1A).
Vorapaxar in Patients With Peripheral Artery Disease: Results From TRA2°P-TIMI 50

Bonaca MP et al, Circulation 2013;127:1522-1529
Antithrombotic therapy

Antiplatelet Therapy

Anticoagulant therapy
Antithrombotic treatment in PAD

- Primary prophylaxis
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Spontaneous course
- local events
- general cardiovascular events

Revascularization
- Endovascular therapy
- Vascular surgery
Endovascular therapy of PAD

- Localisation
  - Iliac: Ø 7-9 mm
  - Femoropopliteal: Ø 5-6 mm
  - Infrapopliteal: Ø 2-3 mm
Endovascular treatment strategies in PAD

• POBA
Bare Stents
Covered stents
Drug Eluting Stents
Bioabsorbable Stents
Brachytherapy
Cryoplasty
Cutting balloon
Debulking
Drug eluting balloon
Medical therapy after endovascular therapy

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

Decision is based on “good clinical practice”, mainly derived from the coronaries or device studies.
## Recommendations for antiplatelet and anticoagulant therapy after revascularization

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**References**

- Esc Guidelines 2011
CAMPER
Clopidogrel and Aspirin in the Management of Peripheral Endovascular Revascularization

• Started 1/03, terminated 9/04
• Anticipated 2000 patients, 100 centers
• Enrolled 308
• Primary failure was use of off-label clopidogrel and lack of site motivation to enter patients
Twelve-Month Results of a Randomized Trial Comparing Mono With Dual Antiplatelet Therapy in Endovascularly Treated Patients With Peripheral Artery Disease

MIRROR

80 patients, 40 were treated with aspirin and clopidogrel

40 patients were treated with aspirin only.

The results were significant in favor of DAPT for TLR after 6 mo.

At 12 months there was no significant difference in TLR
(25% in the clopidogrel and 32% in the placebo group).

Strobl F et al; JEV1 2013;20:699–706
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 opinion leaders all over the world
Antithrombotic Therapy in Peripheral Artery Disease

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

For patients undergoing peripheral artery percutaneous transluminal angioplasty with stenting, we suggest single rather than dual antiplatelet therapy (Grade 2C).
Delayed re-endothelialization of drug-eluting stents

ZILVER PTX® (Cook) - Femoropopliteal

Aspirin 100 + Clopidogrel 75 for ≥ 2 months
Aspirin 100 mg / d thereafter

Nitinol Stents With Polymer-Free Paclitaxel Coating for Lesions in the Superficial Femoral and Popliteal Arteries Above the Knee
Dake M et al; JEV 2011; 18:613–623
Drug eluting stents infrapopliteal

Cypher 3,5/33mm
Drug eluting stents infrapopliteal

3 randomized studies:

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

DAPT: dual antiplatelet therapy

ASS 100 + Clopidogrel 75 at least for 6 months
Aspirin 100 mg / d thereafter
Stentgrafts in the femoropopliteal segment
Longer duration of Re-endothelialization

ASS 100 + Clopidogrel 75 for at least 6 months
Aspirin 100 mg / d thereafter

Heparin-Bonded Stent-Graft for the Treatment of TASC II C and D Femoropopliteal Lesions: The Viabahn-25 cm Trial
Zeller et al; JEVT 2014;21:765–774
Cilostazol increases patency and reduces adverse outcomes in percutaneous fempop revascularisation: a meta-analysis of randomised controlled trials

Twelve-month to 24-month incidence of restenosis

Benjo AM; Open Heart. 2014 Nov 4;1(1)
Cilostazol increases patency and reduces adverse outcomes in percutaneous fempop revascularisation: a meta-analysis of randomised controlled trials

Conclusions and limitation:
Cilostazol significantly increases femoropopliteal patency and decreases adverse outcomes in percutaneous endovascular intervention.
However, further RCTs are needed because of limited sample size; this meta-analysis represents the best current evidence.

Benjo AM; Open Heart. 2014 Nov 4;1(1)
In conclusion:

The optimal antithrombotic treatment for prevention of restenosis / occlusion after endovascular therapy in patients with PAD is still a BIG ?
→ Antithrombotic (mono) therapy for every PAD patient

→ After PTA: Aspirin 100 mg / d

→ After PTA with drug eluting balloon: DAPT for 4 weeks
After *bare metal stent*:  
DAPT at least 1 month

After *drug eluting stent* (femoropopliteal):  
DAPT 2 months
Summary

➔ After femoropopliteal stentgraft: DAPT at least 6 months

➔ After *drug eluting stent* (infrapopliteal): DAPT at least 6 months
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