Antithrombotic therapy in CAD patients with concomitant NAFV: why and for whom?

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www.action-coeur.org
Patients with CAD and AF have Worse Outcomes than Patients with CAD without AF

REACH registry*, outcomes at 1 year
37,724 patients with CAD: 12.5% prevalence of AF

<table>
<thead>
<tr>
<th></th>
<th>AF</th>
<th>No AF</th>
</tr>
</thead>
<tbody>
<tr>
<td>Death / MI / stroke</td>
<td>6.92</td>
<td>4.1</td>
</tr>
<tr>
<td>CV death</td>
<td>3.42</td>
<td>1.69</td>
</tr>
<tr>
<td>Bleeding</td>
<td>1.49</td>
<td>0.81</td>
</tr>
</tbody>
</table>

*REduction of Atherothrombosis for Continued Health (REACH) Registry: International, prospective cohort of 68,236 stable outpatients with established atherothrombosis or >3 atherothrombotic risk factors. CV, cardiovascular

Crude event rates in AF after MI or PCI
Risk of bleeding with multiple antithrombotics – following myocardial infarction

12.0% major bleeding per year
Question #1

A 65-year-old woman is admitted for NSTEMI with a markedly elevated high-sensitivity cardiac troponin level [350 ng/L (ULN <14 ng/L)] and an invasive strategy is planned. She is on vitamin K antagonist (VKA) for atrial fibrillation with prior stroke and the INR is 2.7. The CHA₂DS₂-VASc score is 4 and radial access seems feasible. **How do you manage the timing of angiography?**

| Early angiography on VKA | Delayed angiography after switch |
Angiography should be performed on VKA, with no need for additional anticoagulation at the time of the procedure. Radial access is recommended. Interruption of VKA and bridging with parenteral anticoagulation should be avoided, given the increased risk of bleeding.

- Early angiography on VKA
- Delayed angiography after switch
A 65-year-old woman is admitted for NSTEMI with a markedly elevated high-sensitivity cardiac troponin level [350 ng/L (ULN <14 ng/L)] and an invasive strategy is planned. She is on vitamin K antagonist (VKA) for atrial fibrillation with prior stroke and the INR is 2.7. The CHA₂DS₂-VASc score is 4 and radial access seems feasible. **How do you manage anticoagulation therapy?**

**Parenteral Anticoagulation**

**No Parenteral Anticoagulation**
• Angiography should be performed on VKA, with no need for additional anticoagulation at the time of the procedure.
Question #3: Would the lack of radial access in this patient change your strategy?

YES

NO
If radial access is not feasible, VKA may be discontinued and angiography may be postponed until the INR is 2. If there is
Recommendations for invasive coronary angiography and revascularization in NSTE-ACS

2011 NSTEACS GL ➔ No formal reco for access site selection

The choice of vascular access site depends on operator expertise and local preference, but, due to the large impact of bleeding complications on clinical outcome in patients with elevated bleeding risk, the choice may become important. Since the radial approach has been shown to reduce the risk of bleeding when compared with the femoral approach, this access site should be preferred in patients at high risk of bleeding provided the operator has sufficient experience with this technique.

2015 NSTEACS GL

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Class</th>
<th>Level</th>
<th>Ref.</th>
</tr>
</thead>
<tbody>
<tr>
<td>In centres experienced with radial access, a radial approach is recommended for coronary angiography and PCI.</td>
<td>I</td>
<td>A</td>
<td>MATRIX</td>
</tr>
</tbody>
</table>
Question #4: Would you pretreat this patient with oral P2Y$_{12}$ inhibitors?

[ ] YES
[ ] NO
Pretreatment is not encouraged up until the revascularization strategy is clear.
# Patients on OAC

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Class&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Level&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>In patients with a firm indication for OAC (e.g. atrial fibrillation with CHA&lt;sub&gt;2&lt;/sub&gt;DS&lt;sub&gt;2&lt;/sub&gt;-VASc score ( \geq 2 ), recent venous thromboembolism, LV thrombus, or mechanical valve prosthesis), OAC is recommended in addition to antiplatelet therapy.</td>
<td>I</td>
<td>C</td>
</tr>
<tr>
<td>An early invasive coronary angiography (within 24 hours) should be considered in moderate to high risk patients&lt;sup&gt;c&lt;/sup&gt; irrespective of OAC exposure to expedite treatment allocation (medical vs PCI vs CABG) and to determine the optimal antithrombotic regimen.</td>
<td>IIa</td>
<td>C</td>
</tr>
<tr>
<td>Initial dual antiplatelet therapy with aspirin plus a P2Y&lt;sub&gt;12&lt;/sub&gt; inhibitor in addition to OAC before coronary angiography is not recommended.</td>
<td>III</td>
<td>C</td>
</tr>
</tbody>
</table>
Question #5: Would you use DES?

- YES
- NO
Question #5: Would you use DES?

YES

NO
## Drug Eluting Stent

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>Class&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Level&lt;sup&gt;b&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>In patients undergoing PCI, new-generation DESs are recommended.</td>
<td>I</td>
<td>A</td>
</tr>
<tr>
<td>In patients in whom a short DAPT duration (30 days) is planned because of an increased bleeding risk, a new-generation DES may be considered over a BMS.</td>
<td>IIb</td>
<td>B</td>
</tr>
</tbody>
</table>

Valgimigli M et al. J Am Coll Cardiol 2015;65: 805–15
## Anticoagulation during Stenting on OAC

<table>
<thead>
<tr>
<th>Patients undergoing coronary stenting</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Anticoagulation</strong></td>
</tr>
<tr>
<td>During PCI, use of additional parenteral anticoagulation is recommended, irrespective of the timing of the last dose of all NOACs and if INR&lt;2.5 in VKA-treated patients.</td>
</tr>
<tr>
<td>Uninterrupted therapeutic anticoagulation with VKA or NOACs should be considered during the periprocedural phase.</td>
</tr>
</tbody>
</table>
Leaders Free

- Age ≥ 75
- Oral anticoagulants
- Renal failure
- Surgery soon
- Anemia or recent TF
- Cancer
- Hospital for bleeding
- DAPT compliance
- NSAID or steroids
- Thrombocytopenia
- Stroke < 1 year
- Severe liver disease
- Prior intracerebral bleed

BMS
DCS

Urban Ph et al. NEJM 2015
Primary Safety Endpoint (Cardiac Death, MI, ST)

<table>
<thead>
<tr>
<th>Number at Risk</th>
<th>DCS</th>
<th>BMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1221</td>
<td>1211</td>
</tr>
<tr>
<td>90</td>
<td>1146</td>
<td>1115</td>
</tr>
<tr>
<td>180</td>
<td>1105</td>
<td>1066</td>
</tr>
<tr>
<td>270</td>
<td>1081</td>
<td>1037</td>
</tr>
<tr>
<td>390</td>
<td>1045</td>
<td>1000</td>
</tr>
</tbody>
</table>

Cumulative Percentage with Event

- DCS: 12.9%
- BMS: 9.4%

$p = 0.005$ for superiority
Question #6: An LAD lesion is eligible for coronary stenting. For how long triple therapy?

- One month
- Six months
Hasbled is 3

One month

Six months
She has been on triple therapy (i.e. aspirin, clopidogrel and VKA) for 1 month and then on a combination of aspirin and VKA. At one year, she has been symptom-free since then (no bleeding and no ischemia). Her primary care physician is asking whether aspirin can be stopped.

**YES**  **NO**
Although this question has never been prospectively addressed, based on expert consensus, aspirin may be stopped because there are no high-risk features for a recurrent coronary event (e.g. three-vessel disease CAD, left main stenting, recurrent ischaemic symptoms).
2016 AFIB Guidelines

AF patient in need of OAC after an ACS

Bleeding risk low compared to risk for ACS or stent thrombosis

Bleeding risk high compared to risk for ACS or stent thrombosis

Time from ACS:
- 0
- 1 month
- 3 months
- 6 months
- 12 months
- lifelong

ACS = acute coronary syndrome; AF = atrial fibrillation; OAC = oral anticoagulation (using vitamin K antagonists or non-vitamin K antagonist oral anticoagulants); PCI = percutaneous coronary intervention.

1. Dual therapy with OAC and aspirin or clopidogrel may be considered in selected patients, especially those not receiving a stent or patients at a longer time from the index event.
2. OAC plus single antiplatelet.
3. Dual therapy with OAC and an antiplatelet agent (aspirin or clopidogrel) may be considered in patients at high risk of coronary events.
Beyond one year

"...in very selected patients at high risk of ischaemic events:

- prior stent thrombosis on adequate antiplatelet therapy,
- stenting in the left main or last remaining patent coronary artery,
- multiple stenting in proximal coronary segments,
- two stents bifurcation treatment,
- or diffuse multivessel disease, especially in diabetic patients.
### Antiplatelet Therapy after Stenting on OAC

<table>
<thead>
<tr>
<th>Antiplatelet treatment</th>
<th>Level</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Following coronary stenting, DAPT including new P2Y₁₂ inhibitors should be considered as alternative to triple therapy for patients with NSTE-ACS and atrial fibrillation with a CHA²DS²-VASc score = 1 (in males) or 2 (in females).</td>
<td>IIA</td>
<td>C</td>
</tr>
<tr>
<td>If at low bleeding risk (HAS-BLED ≤2), triple therapy with OAC, aspirin (75–100 mg/day) and clopidogrel 75 mg/day should be considered for 6 months irrespective of stent type followed by OAC and aspirin 75–100 mg/day or clopidogrel (75 mg/day) continued up to 12 months.</td>
<td>IIA</td>
<td>C</td>
</tr>
<tr>
<td>If at high bleeding risk (HAS-BLED ≥3), triple therapy with OAC, aspirin (75–100 mg/day) and clopidogrel 75 mg/day should be considered for a duration of 1 month followed by OAC and aspirin 75–100 mg/day or clopidogrel (75 mg/day) irrespective of the stent type (BMS or new-generation DES).</td>
<td>IIA</td>
<td>C</td>
</tr>
<tr>
<td>Dual therapy with OAC and clopidogrel 75 mg/day may be considered as an alternative to triple antithrombotic therapy in selected patients (HAS-BLED ≥3 and low risk of stent thrombosis).</td>
<td>IIB</td>
<td>B</td>
</tr>
<tr>
<td>The use of ticagrelor or prasugrel as part of triple therapy is not recommended.</td>
<td>III</td>
<td>C</td>
</tr>
</tbody>
</table>
Help to implement GL in daily practice

- 40 cases each
- No reference
- Link to the dedicated sections of the GL

European Heart Journal
doi:10.1093/eurheartj/ehv409

Questions and answers on diagnosis and risk assessment: a companion document of the 2015 ESC Guidelines for the Management of Acute Coronary Syndromes in Patients Presenting Without Persistent ST-Segment Elevation†

Authors: Christian Mueller¹, Carlo Patrono², Marco Valgimigli³, Jean-Philippe Collet⁴, and Marco Roffi⁵*

European Heart Journal

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Thank you

