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Duke University
Durham, NC

Learning Objectives

1) Examine recent clinical data and ACC/AHA guideline updates regarding the optimal use and duration of dual antiplatelet therapy (DAPT) in acute coronary syndromes (ACS).

2) Individualize the duration of DAPT following ACS or percutaneous coronary intervention (PCI) by examining patient specific factors to balance ischemic vs. bleeding risk of extended DAPT.

3) Explore strategies members of the interprofessional healthcare team can employ to improve adherence and long-term persistence to antiplatelet therapies at discharge and beyond.
Case 1

• 61 year old man with diabetes and hypertension
• Admitted with NSTE ACS
• Received drug-eluting stent (DES) to mid LAD thrombotic lesion
• EF=45% after PCI
• Now ready for discharge

What do you tell the patient about his post-discharge DAPT?
History of Dual Antiplatelet Therapy (DAPT) in Patients with Coronary Artery Disease


CURE Trial (NSTE-ACS)
Primary Endpoint at 30 days: CV Death/MI/Stroke

Cumulative Hazard Rate for (MI/CVA/CV Death)

Placebo + ASA

Clopidogrel + ASA

~20% RRR
95% CI=0.67-0.92
P=.003

RRR=relative risk reduction

**TRITON (Prasugrel)**
Patients with STEMI or NSTE-ACS Undergoing PCI

- 1.3% reduction in definite/probable stent thrombosis
- 0.6% increase in TIMI major bleeding; 0.3% increase in fatal bleeding

HR 0.81 (0.73-0.90)  
$P < .001$  
NNT=46


**PLATO (Ticagrelor)**
ACS Treated with either PCI or Medical Therapy

- 0.7% reduction in definite/probable stent thrombosis
- 1.4% reduction in mortality
- No increase in overall bleeding; 0.7% increase in non-CABG PLATO major bleeding

HR 0.84 (95% CI 0.77–0.92)  
$P < .001$

DAPT in Patients with Recent ACS

Recent ACS (NSTE-ACS or STEMI)

- CABG
- Medical Therapy
- Lytic (STEMI)
- PCI (BMS or DES)

Class I:
- After CABG, resume P2Y₁₂ inhibitor to complete 1y of DAPT (clopidogrel, prasugrel, ticagrelor)
- At least 12 mo (clopidogrel, ticagrelor)
- At least 14 days and up to 12 mo (clopidogrel)
- At least 12 mo (clopidogrel, prasugrel, ticagrelor)

No high risk bleeding and no significant overt bleeding on DAPT

Class IIb:
- >12 mo may be reasonable

Guideline Recommendations for Duration of DAPT in ACS

- For ACS (NSTE and STEMI) in general, patients should be managed with dual antiplatelet therapy for at least 12 months¹

- Considerations for our patient:
  - Which P2Y₁₂ inhibitor?
  - Aspirin Dose?
  - What factors would lead to shorter or longer duration recommendations?

**Balance Against Higher Bleeding Risk**

![Graph showing % Events vs. Bleed Types (TIMI Major, Life Threatening, Nonfatal, Fatal, ICH) for Clopidogrel and Prasugrel.]

- **Clopidogrel** vs. **Prasugrel**
  - TIMI Major Bleeds: ARD 0.6% (HR 1.32)
  - Life Threatening: ARD 0.5% (HR 1.52)
  - Nonfatal: ARD 0.2%
  - Fatal: ARD 0.3%
  - ICH: ARD 0%

- **P-values**:
  - P = .03
  - P = .01
  - P = NS
  - P = .002
  - P = NS


**Higher Potency Antiplatelet Therapy**

<table>
<thead>
<tr>
<th>Recommendations</th>
<th>COR</th>
<th>LOE</th>
</tr>
</thead>
<tbody>
<tr>
<td>It is reasonable to <strong>choose ticagrelor over clopidogrel</strong> for maintenance P2Y12 treatment in ACS patients treated with an early invasive strategy and/or PCI.</td>
<td>IIa</td>
<td>B-R</td>
</tr>
<tr>
<td>It is reasonable to <strong>choose prasugrel over clopidogrel</strong> for maintenance P2Y12 treatment in ACS patients who undergo PCI who are not at high risk for bleeding complications.</td>
<td>IIa</td>
<td>B-R</td>
</tr>
<tr>
<td>In ACS patients managed with medical therapy alone (without revascularization or fibrinolytic therapy) treated with DAPT, it is reasonable to use <strong>ticagrelor in preference to clopidogrel</strong> for maintenance P2Y12 inhibitor therapy.</td>
<td>IIa</td>
<td>B-R</td>
</tr>
<tr>
<td><strong>Prasugrel should not</strong> be administered to patients with a prior history of stroke or TIA.</td>
<td>III:</td>
<td>Harm</td>
</tr>
</tbody>
</table>

Aspirin Dosing in Patients Treated with DAPT

<table>
<thead>
<tr>
<th>COR</th>
<th>LOE</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>B-NR</td>
<td>In patients treated with DAPT, a daily aspirin dose of 81 mg (range 75 mg–100 mg) is recommended</td>
</tr>
</tbody>
</table>

As both monotherapy and as part of DAPT:
• Aspirin <100 mg = less bleeding then higher doses
• Aspirin 75-150 mg = comparable to higher doses in reduction of ischemic events


Case 1

61 year old man with diabetes and hypertension admitted with NSTE ACS, received drug-eluting stent (DES) to mid LAD thrombotic lesion, EF=45% after PCI. Now ready for discharge.

What do you tell this patient about his post-discharge DAPT?
• Aspirin 81 mg daily (life long-for now) + P2Y<sub>12</sub> inhibitor (for at least 12 months)
• Is the patient able to tolerate and afford a higher potency P2Y<sub>12</sub> inhibitor (prasugrel 10 mg daily or ticagrelor 90 mg BID)?
• Prepare patient for at least 1-year of DAPT – Discuss financial considerations and eliminate barriers to adherence
• Planned evaluation of additional bleeding risk factors and re-evaluation after 12 months for on-going need of DAPT
ACS Patients NOT Taking Evidence-Based Therapy At 1-Year

<table>
<thead>
<tr>
<th>Medication</th>
<th>Non-Adherence Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aspirin</td>
<td>13.3%</td>
</tr>
<tr>
<td>Clopidogrel</td>
<td>66.7%</td>
</tr>
<tr>
<td>Beta Blocker</td>
<td>25%</td>
</tr>
<tr>
<td>ACEI</td>
<td>39.7%</td>
</tr>
<tr>
<td>Statin</td>
<td>17.8%</td>
</tr>
</tbody>
</table>


Medication Adherence Remains Suboptimal Early After MI

- As early as 6 weeks after hospitalization for MI, ~30% of MI patients are suboptimally adherent to prescribed cardiovascular medications

- One third of patients with low adherence reported missing doses of their antiplatelet therapy at least twice a week following PCI


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Early Discontinuation of Dual Antiplatelet Therapy Increases Mortality

- Hazard Ratio: 9.02
- 95% CI: 1.3-60.6; \( P = .02 \)


Delays in Filling Clopidogrel Prescription After Hospital Discharge

- 7,402 patients after MI and stent placement
- 1 in 6 patients failed to fill their prescription on the day of discharge
- Median delay: 3 days


Consider filling prescription prior to discharge
Discharge Prescription Services

• “Meds-to-Beds” Programs – mobile pharmacy services bring discharge medications to the patient’s bedside

• Allows team to identify financial barriers prior to discharge
  • Prior authorization obtained prior to discharge to decrease delays in therapy
  • Identify those that are underinsured or uninsured
  • Involve patient assistant programs

• Increased opportunity for pharmacist counseling, identification of medication errors

• Ensures medications are in hand before departure

https://acc.mediasite.com/mediasite/Play/9ebfb44d0f042899c0fa0f855aad1d.

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Early Follow-up Improves Adherence

<table>
<thead>
<tr>
<th>Adherence at 90 days</th>
<th>Proportion of Patients with PDC &gt;80% For Each Medication Prescribed at Discharge</th>
<th>Composite Medication Adherence</th>
<th>Adjusted OR (95% CI)</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Beta-Blocker</td>
<td>ACEI/ARB</td>
<td>Statin</td>
<td>P2Y12 Inhibitor</td>
</tr>
<tr>
<td>≤ 1 week</td>
<td>69.3</td>
<td>65.0</td>
<td>64.7</td>
<td>65.3</td>
</tr>
<tr>
<td>1-2 weeks</td>
<td>71.4</td>
<td>64.6</td>
<td>64.2</td>
<td>66.0</td>
</tr>
<tr>
<td>2-6 weeks</td>
<td>69.7</td>
<td>65.5</td>
<td>64.3</td>
<td>65.4</td>
</tr>
<tr>
<td>&gt; 6 weeks</td>
<td>61.3</td>
<td>56.8</td>
<td>58.3</td>
<td>57.1</td>
</tr>
<tr>
<td>Adherence at 1 year</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤ 1 week</td>
<td>62.2</td>
<td>55.4</td>
<td>57.0</td>
<td>64.1</td>
</tr>
<tr>
<td>1-2 weeks</td>
<td>63.1</td>
<td>55.6</td>
<td>56.6</td>
<td>65.3</td>
</tr>
<tr>
<td>2-6 weeks</td>
<td>61.1</td>
<td>55.1</td>
<td>56.4</td>
<td>64.5</td>
</tr>
<tr>
<td>&gt; 6 weeks</td>
<td>56.0</td>
<td>49.5</td>
<td>51.2</td>
<td>57.7</td>
</tr>
</tbody>
</table>

Deciding DAPT Discharge Regimen May Be Less Than Half the Battle

• 85% of physicians believe the majority of their patients are adherent

• 85% of patients surveyed state that they would not tell their doctor that they were not planning on buying a medicine


30 Days Following MI and DES Placement

Patients who discontinued antiplatelet therapy:
• Unaware they should be taking the drug
• Didn’t know for how long
• “I was just taking it because they were telling me to”

Patients who continued antiplatelet therapy:
• Could explain the purpose and benefit
• Knew the intended duration of therapy
• “keeps the pipes open” ... “so things won’t stick”

Deciding DAPT Duration

DAPT in Patients with Recent ACS

Recent ACS (NSTE-ACS or STEMI)

- CABG
- Medical Therapy
- Lytic (STEMI)
- PCI (BMS or DES)

Class I:
- After CABG resume P2Y12 inhibitor to complete 1y of DAPT (clopidogrel, prasugrel, ticagrelor)

Class I:
- At least 12 mo (clopidogrel, ticagrelor)

Class I:
- At least 12 mo (clopidogrel, prasugrel, ticagrelor)

Class IIb:
- DC after 6 mo may be reasonable

- High bleeding risk or overt bleeding

- No high risk bleeding and no significant overt bleeding on DAPT

Class IIb:
- >12 mo may be reasonable

**SEVERE BLEEDING**
Any bleeding requiring hospitalization, associated with a severe blood loss (>5 g/dl Hb) which is hemodynamically stable and not rapidly evolving

e.g., severe genitourinary, respiratory or upper/lower gastrointestinal bleeding

**Bleeding During Treatment with DAPT**

- Consider stopping DAPT and continue with single antiplatelet therapy (SAPT), preferably with the P2Y12 inhibitor especially in case of upper GI bleeding.
  
- If bleeding persists despite treatment or treatment is not possible, consider stopping all antithrombotic medications.

- Once bleeding has ceased, re-evaluate the need for DAPT or SAPT, preferably with the P2Y12 inhibitor especially in case of upper GI bleeding.

- If DAPT is re-started, consider shortening DAPT duration or switching to less potent P2Y12 inhibitor (i.e. from ticagrelor/prasugrel to clopidogrel), especially if recurrent bleeding occurs.


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**PPI Therapy and DAPT**

Recommendations Based on Risk of GI Bleeding

<table>
<thead>
<tr>
<th>COR</th>
<th>LOE</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>C</td>
<td>PPI use for patients with history of prior GI bleeding who require DAPT</td>
</tr>
<tr>
<td>IIa</td>
<td>C</td>
<td>PPI use for patients with increased risk of GI bleeding (advanced age, concomitant use of warfarin, steroids, NSAIDs, <em>H. pylori</em> infection, etc.) who require DAPT</td>
</tr>
<tr>
<td>III: No Benefit</td>
<td>C</td>
<td>Routine use of a PPI is not recommended for patients at low risk of GI bleeding, who have much less potential to benefit from prophylactic therapy</td>
</tr>
</tbody>
</table>


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Case 2

- 65 year-old male returns to clinic for 1 year follow-up after his STEMI (treated with DES to the proximal LCx -3 mm vessel).
- Over the last year he has not had any recurrent ischemic events.
- EF preserved, on BP meds for hypertension. No diabetes.
- He has taken ASA 81 mg and ticagrelor 90 mg BID for the past year without interruption.
- Bruises easily, nuisance when he nicks himself shaving, but no major bleeding.

What would you like to do with his DAPT?

A. Discontinue both ASA 81 mg daily and ticagrelor 90 mg BID
B. Discontinue ASA 81 mg daily and continue ticagrelor 90 mg BID
C. Discontinue ticagrelor and continue ASA 81 mg
D. Continue both ASA 81 mg and ticagrelor 90 mg BID
E. Continue ASA 81 mg daily and decrease ticagrelor to 60 mg BID
F. Continue ASA 81 mg and switch ticagrelor to clopidogrel 75 mg daily
Who Should Get LONGER DAPT Durations?

- In patients who have no new ischemic event nor bleeding at the 1 year post-ACS follow-up
  - Clinical evaluation
  - Validated Risk Scores (DAPT Score/PRECISE Score)
  - Patient preference and discussion
    - Has therapy created a financial barrier?
    - Have elective procedures been delayed?

What You Need To Consider?

- High-risk features predicting stent thrombosis

<table>
<thead>
<tr>
<th>Patient</th>
<th>Stent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes</td>
<td>Long stent length</td>
</tr>
<tr>
<td>LV dysfunction</td>
<td>Bifurcation stent</td>
</tr>
<tr>
<td>Multivessel disease</td>
<td>Stent w/in stent</td>
</tr>
<tr>
<td>Prior stent thrombosis</td>
<td>L main or prox LAD stent</td>
</tr>
<tr>
<td>Renal insufficiency</td>
<td>Stent underexpansion/malapposition</td>
</tr>
<tr>
<td>Recent ACS</td>
<td>Persistent slow flow</td>
</tr>
<tr>
<td></td>
<td>Dissection</td>
</tr>
<tr>
<td></td>
<td>Brachytherapy</td>
</tr>
</tbody>
</table>

**PEGASUS: 1-3 years Post-MI**

- **N=21,162**
- **Median follow-up 33 months**
- **Ticagrelor 90 mg**
  - HR 0.85 (95% CI 0.75–0.96)
  - P=0.008
  - NNT=84
- **Ticagrelor 60 mg**
  - HR 0.84 (95% CI 0.74–0.95)
  - P=0.004
  - NNT=79
- **Placebo** (9.04%)


**PEGASUS-TIMI 54: Bleeding**

- **Ticag 90: HR 2.69 (1.96-3.70)**
- **Ticag 60: HR 2.32 (1.68-3.21)**
- **P<.001**

**3-Year KM Event Rate (%)**

- **TIMI Major**
  - Ticagrelor 90 mg: 6.6
  - Ticagrelor 60 mg: 6.4
  - Placebo: 6.8
- **TIMI Minor**
  - Ticagrelor 90 mg: 1.3
  - Ticagrelor 60 mg: 1.2
  - Placebo: 1.4
- **Fatal bleeding or ICH**
  - Ticagrelor 90 mg: 0.6
  - Ticagrelor 60 mg: 0.7
  - Placebo: 0.6
- **ICH**
  - Ticagrelor 90 mg: 0.5
  - Ticagrelor 60 mg: 0.6
  - Placebo: 1.0
- **Fatal Bleeding**
  - Ticagrelor 90 mg: 0.3
  - Ticagrelor 60 mg: 0.3
  - Placebo: 0.3

**Based on PEGASUS data ticagrelor 60 mg twice daily was approved for use after one year following ACS**

**60 mg twice daily was as effective as 90 mg twice daily and associated with less bleeding**


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CV Death/MI/Stroke with Prolonged DAPT

<table>
<thead>
<tr>
<th>Study</th>
<th>Events</th>
<th>Total</th>
<th>Events</th>
<th>Total</th>
<th>Risk Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHARISMA</td>
<td>125</td>
<td>1903</td>
<td>162</td>
<td>1943</td>
<td>0.77 (0.61-0.98)</td>
</tr>
<tr>
<td>PRODIGY</td>
<td>63</td>
<td>732</td>
<td>69</td>
<td>733</td>
<td>0.91 (0.65-1.28)</td>
</tr>
<tr>
<td>ARCTIC-Int’n</td>
<td>3</td>
<td>156</td>
<td>4</td>
<td>167</td>
<td>0.79 (0.18-3.51)</td>
</tr>
<tr>
<td>DAPT</td>
<td>59</td>
<td>1805</td>
<td>108</td>
<td>1771</td>
<td>0.52 (0.38-0.72)</td>
</tr>
<tr>
<td>DES-LATE</td>
<td>56</td>
<td>1512</td>
<td>66</td>
<td>1551</td>
<td>0.85 (0.60-1.21)</td>
</tr>
<tr>
<td>PEGASUS</td>
<td>980</td>
<td>14095</td>
<td>578</td>
<td>7067</td>
<td>0.84 (0.76-0.94)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1286</td>
<td>20203</td>
<td>987</td>
<td>13232</td>
<td>0.78 (0.67-0.90)</td>
</tr>
</tbody>
</table>

P = .001

1.1% absolute reduction over mean 31 month DAPT Rx

Major Bleeding with Prolonged DAPT

<table>
<thead>
<tr>
<th>Study</th>
<th>Events</th>
<th>Total</th>
<th>Events</th>
<th>Total</th>
<th>Risk Ratio (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHARISMA</td>
<td>45</td>
<td>1903</td>
<td>39</td>
<td>1943</td>
<td>1.17 (0.76-1.79)</td>
</tr>
<tr>
<td>PRODIGY</td>
<td>9</td>
<td>732</td>
<td>6</td>
<td>733</td>
<td>1.50 (0.53-4.20)</td>
</tr>
<tr>
<td>ARCTIC-Int’n</td>
<td>2</td>
<td>156</td>
<td>0</td>
<td>167</td>
<td>5.35 (0.26-110.6)</td>
</tr>
<tr>
<td>DAPT</td>
<td>34</td>
<td>1805</td>
<td>14</td>
<td>1771</td>
<td>2.38 (1.27-4.43)</td>
</tr>
<tr>
<td>DES-LATE</td>
<td>39</td>
<td>1512</td>
<td>31</td>
<td>1551</td>
<td>1.27 (0.79-2.03)</td>
</tr>
<tr>
<td>PEGASUS</td>
<td>242</td>
<td>13946</td>
<td>54</td>
<td>6996</td>
<td>2.50 (1.86-3.36)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>371</td>
<td>20054</td>
<td>144</td>
<td>13161</td>
<td>1.73 (1.19-2.50)</td>
</tr>
</tbody>
</table>

P = .004

0.8% absolute increase over mean 31 month DAPT Rx
**Risk Scores Validated for Dual Antiplatelet Therapy Duration Decision-Making**

<table>
<thead>
<tr>
<th>PRECISE DAPT Score (<a href="http://www.precisedaptscore.com">www.precisedaptscore.com</a>)</th>
<th>DAPT Score (<a href="http://www.daptsstudy.org">www.daptsstudy.org</a>)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time of use</td>
<td>At the time of coronary stenting</td>
</tr>
<tr>
<td>DAPT duration</td>
<td>Short DAPT (3-6 months) vs Standard/long DAPT (12-24 months)</td>
</tr>
<tr>
<td>Calculation</td>
<td>![Score calculation image]</td>
</tr>
<tr>
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<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Score range</td>
<td>0 to 100 points</td>
</tr>
<tr>
<td>Decision</td>
<td>Score ≥25 = Short DAPT</td>
</tr>
<tr>
<td></td>
<td>Score &lt;25 = Standard/long DAPT</td>
</tr>
</tbody>
</table>

**Prolonged or Extended DAPT >1 Year Post-MI**

Taken as a whole, trials of prolonged or extended DAPT suggest:

- Prolonged DAPT benefit/risk ratio more favorable in those with prior MI (compared to stable ischemic heart disease [SIHD])
- ≈1% to 3% absolute decrease in ischemic events over the course of several years of Rx
- ≈1% absolute increase in bleeding events over the course of several years of Rx

• 65 year old man returns for routine clinical follow-up 1 year after his STEMI was treated with DES to the proximal LCx (3mm vessel) without complications.

• EF preserved, on BP meds for hypertension. No diabetes.

• He has taken ASA 81 mg daily and ticagrelor 90 mg BID for the past year without interruption. Bruises easily, nuisance when he nicks himself shaving, but no major bleeding.

What would you like to do with his DAPT?
A. Discontinue ASA 81 mg daily and ticagrelor 90 mg BID
B. Discontinue ASA 81 mg daily, continue ticagrelor 90 mg BID
C. Discontinue ticagrelor, continue ASA 81 mg
D. Continue both ASA 81 mg and ticagrelor 90 mg BID
E. Continue ASA 81 mg daily and decrease ticagrelor to 60 mg BID
F. Continue ASA 81 mg and switch ticagrelor to clopidogrel 75 mg daily

---

**Dual Antiplatelet Therapy Study**

“DAPT Score”

<table>
<thead>
<tr>
<th>Variable</th>
<th>Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age ≥75</td>
<td>-2</td>
</tr>
<tr>
<td>Age 65 - &lt;75</td>
<td>-1</td>
</tr>
<tr>
<td>Age &lt;65</td>
<td>0</td>
</tr>
<tr>
<td>Current cigarette smoker</td>
<td>+1</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>+1</td>
</tr>
<tr>
<td>MI at presentation</td>
<td>+1</td>
</tr>
<tr>
<td>Stent diameter &lt;3mm</td>
<td>+1</td>
</tr>
<tr>
<td>Paclitaxel-eluting stent</td>
<td>+1</td>
</tr>
<tr>
<td>CHF or LVEF&lt;30%</td>
<td>+2</td>
</tr>
<tr>
<td>Saphenous vein graft PCI</td>
<td>+2</td>
</tr>
</tbody>
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Patients undergoing very late (>1 year) switch:

- De-escalation (switching from prasugrel or ticagrelor to clopidogrel) should occur with a maintenance dose regimen (no loading dose).

- A lower dosing regimen of ticagrelor 60 mg BID has recently been approved by the FDA for post-myocardial infarction patients >1 year from their index event.

- When ticagrelor therapy is initiated for post–myocardial infarction patients >1 year from their index event, a switch should be made directly to 60 mg BID maintenance dose (no loading dose) regardless of the prior P2Y\textsubscript{12} inhibitor used.
Case 3

• Two months after MI discharge, the patient returns for routine follow-up. He completed cardiac rehab and still walks >1 mile daily. You elicit an irregular heart rhythm on exam, and ECG confirms presence of asymptomatic atrial fibrillation of unknown duration at a rate in the 70s. Heart rate in the 90s on metoprolol when ambulated in the clinic hallway. He has remained on ASA 81 mg and ticagrelor 90 mg BID since discharge without bleeding complications.

• What do you do next?

Case: Atrial Fibrillation and DAPT

What is your next step?

A. Schedule the patient for cardioversion to avoid the need for anticoagulation
B. Continue ASA and ticagrelor without change
C. Change ticagrelor to clopidogrel and add warfarin
D. Change ticagrelor to clopidogrel and add a DOAC
E. Continue ticagrelor and replace ASA with an anticoagulant
F. Change ticagrelor to clopidogrel and replace ASA with an anticoagulant
Assess ischemic and bleeding risks using validated risk predictors (CHA₂DS₂-VASc and HAS-BLED)

Keep triple therapy durations as short as possible; dual therapy only (oral anticoagulant and clopidogrel) may be considered in select patients

Clopidogrel is the P2Y₁₂ inhibitor of choice

Lessen intensity of anticoagulation: Consider target INR of 2.0-2.5 when warfarin is used

Use low dose (≤100 mg) aspirin

Prophylactic proton-pump inhibitors to reduce GI bleeding

Kaplan-Meier Estimates of First Occurrence of Clinically Significant Bleeding Events: PIONEER AF-PCI


Kaplan-Meier Estimates of First Occurrence of CV Death, MI or Stroke: PIONEER AF-PCI


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RE-DUAL PCI: Rate of Intracranial Hemorrhage

![Graph showing rate of intracranial hemorrhage](image)


Case: Atrial Fibrillation and DAPT

What is your next step?

A. Schedule the patient for cardioversion to avoid the need for anticoagulation
B. Continue ASA and ticagrelor without change
C. Change ticagrelor to clopidogrel and add warfarin
D. Change ticagrelor to clopidogrel and add a DOAC
E. Continue ticagrelor and replace ASA with an anticoagulant
F. Change ticagrelor to clopidogrel and replace ASA with an anticoagulant

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Decisions about treatment and duration of DAPT require a thoughtful assessment of the benefit/risk ratio and consideration of patient preferences.

Shorter-duration DAPT can be considered for patients at lower ischemic risk with high-bleeding risk.

Longer-duration DAPT may be reasonable for patients at higher ischemic risk with a lowering bleeding risk.

Lower doses of ASA are associated with less bleeding. 81 mg daily is the recommended dose with DAPT.

Resources

  Link: [http://circ.ahajournals.org/content/134/10/e123.long](http://circ.ahajournals.org/content/134/10/e123.long)

- 2017 ESC Focused Update on Dual Antiplatelet Therapy in coronary artery disease developed in collaboration with EACTS. *Eur Heart J*. 2017

  Link: [http://circ.ahajournals.org/content/136/20/1955.long](http://circ.ahajournals.org/content/136/20/1955.long)

  Link: [http://circinterventions.ahajournals.org/content/9/11/e004395.long](http://circinterventions.ahajournals.org/content/9/11/e004395.long)
References


References