2016 ACC/AHA Guideline Focused Update on Duration of Dual Antiplatelet Therapy in Patients With Coronary Artery Disease

Developed in Collaboration with American Association for Thoracic Surgery, American Society of Anesthesiologists, Society for Cardiovascular Angiography and Interventions, Society of Cardiovascular Anesthesiologists, and Society of Thoracic Surgeons

Endorsed by Preventive Cardiovascular Nurses Association and Society for Vascular Surgery

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Citation

This slide set is adapted from the 2016 ACC/AHA Guideline Focused Update on Duration of Dual Antiplatelet Therapy in Patients with Coronary Artery Disease. Published on March 29th, 2016, available at: *Journal of the American College of Cardiology* http://content.onlinejacc.org/article.aspx?doi=10.1016/j.jacc.2016.03.513 and *Circulation* http://circ.ahajournals.org/lookup/doi/10.1161/CIR.0000000000000404

The full-text guidelines are also available on the following Web sites: ACC (www.acc.org) and AHA (professional.heart.org).

2016 ACC/AHA Duration of DAPT Guideline Focused Update Writing Committee

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Scope of the Guideline

This document will update six guidelines:

- *2011 ACCF/AHA Guideline for Coronary Artery Bypass Graft Surgery*
- *2011 ACCF/AHA/SCAI Guideline for Percutaneous Coronary Intervention*
- *2012 ACC/AHA/AATS/PCNA/SCAI/STS Focused Update of the Guideline for the Diagnosis and Management of Patients With Stable Ischemic Heart Disease*
- *2013 ACCF/AHA Guideline for the Management of ST-Elevation Myocardial Infarction*
- *2014 ACC/AHA Guideline for the Management of Patients With Non–ST-Elevation Acute Coronary Syndromes*
- *2014 ACC/AHA Guideline on Perioperative Cardiovascular Evaluation and Management of Patients Undergoing Noncardiac Surgery*

Table 1. Applying Class of Recommendation and Level of Evidence

CLASS (STRENGTH) OF RECOMMENDATION

CLASS I (STRONG) — Benefit >>> Risk

Suggested phrases for writing recommendations:
- Is recommended
- Is indicated/useful/effective/beneficial
- Should be performed/administered/other
- Comparative-Effectiveness Phrases†:
  - Treatment/strategy A is recommended/indicated in preference to treatment B
  - Treatment A should be chosen over treatment B

CLASS IIa (MODERATE) — Benefit >> Risk

Suggested phrases for writing recommendations:
- Is reasonable
- Can be useful/effective/beneficial
- Comparative-Effectiveness Phrases†:
  - Treatment/strategy A is probably recommended/indicated in preference to treatment B
  - It is reasonable to choose treatment A over treatment B

CLASS IIb (WEAK) — Benefit ≥ Risk

Suggested phrases for writing recommendations:
- May/might be reasonable
- May/might be considered
- Usefulness/effectiveness is unknown/unclear/uncertain or not well established

CLASS III: No Benefit (MODERATE) — Benefit = Risk
(Generally, LOE A or B use only)

Suggested phrases for writing recommendations:
- Is not recommended
- Is not indicated/useful/effective/beneficial
- Should not be performed/administered/other

CLASS III: Harm (STRONG) — Risk > Benefit

Suggested phrases for writing recommendations:
- Potentially harmful
- Causes harm
- Associated with excess morbidity/mortality
- Should not be performed/administered/other

LEVEL (QUALITY) OF EVIDENCE‡

LEVEL A
- High-quality evidence‡ from more than 1 RCTs
- Meta-analyses of high-quality RCTs
- One or more RCTs corroborated by high-quality registry studies

LEVEL B-R (Randomized)
- Moderate-quality evidence‡ from 1 or more RCTs
- Meta-analyses of moderate-quality RCTs

LEVEL B-NR (Nonrandomized)
- Moderate-quality evidence‡ from 1 or more well-designed, well-executed nonrandomized studies, observational studies, or registry studies
- Meta-analyses of such studies

LEVEL C-LD (Limited Data)
- Randomized or nonrandomized observational or registry studies with limitations of design or execution
- Meta-analyses of such studies
- Physiological or mechanistic studies in human subjects

LEVEL C-EO (Expert Opinion)

Consensus of expert opinion based on clinical experience

COR and LOE are determined independently (any COR may be paired with any LOE).

A recommendation with LOE C does not imply that the recommendation is weak. Many important clinical questions addressed in guidelines do not lend themselves to clinical trials. Although RCTs are unavailable, there may be a very clear clinical consensus that a particular test or therapy is useful or effective.

* The outcome or result of the intervention should be specified (an improved clinical outcome or increased diagnostic accuracy or incremental prognostic information).

† For comparative-effectiveness recommendations (COR I and IIa; LOE A and B only), studies that support the use of comparator verbs should involve direct comparisons of the treatments or strategies being evaluated.

‡ The method of assessing quality is evolving, including the application of standardized, widely used, and preferably validated evidence grading tools; and for systematic reviews, the incorporation of an Evidence Review Committee.

COR indicates Class of Recommendation; EO, expert opinion; LD, limited data; LOE, Level of Evidence; NR, nonrandomized; R, randomized; and RCT, randomized controlled trial.

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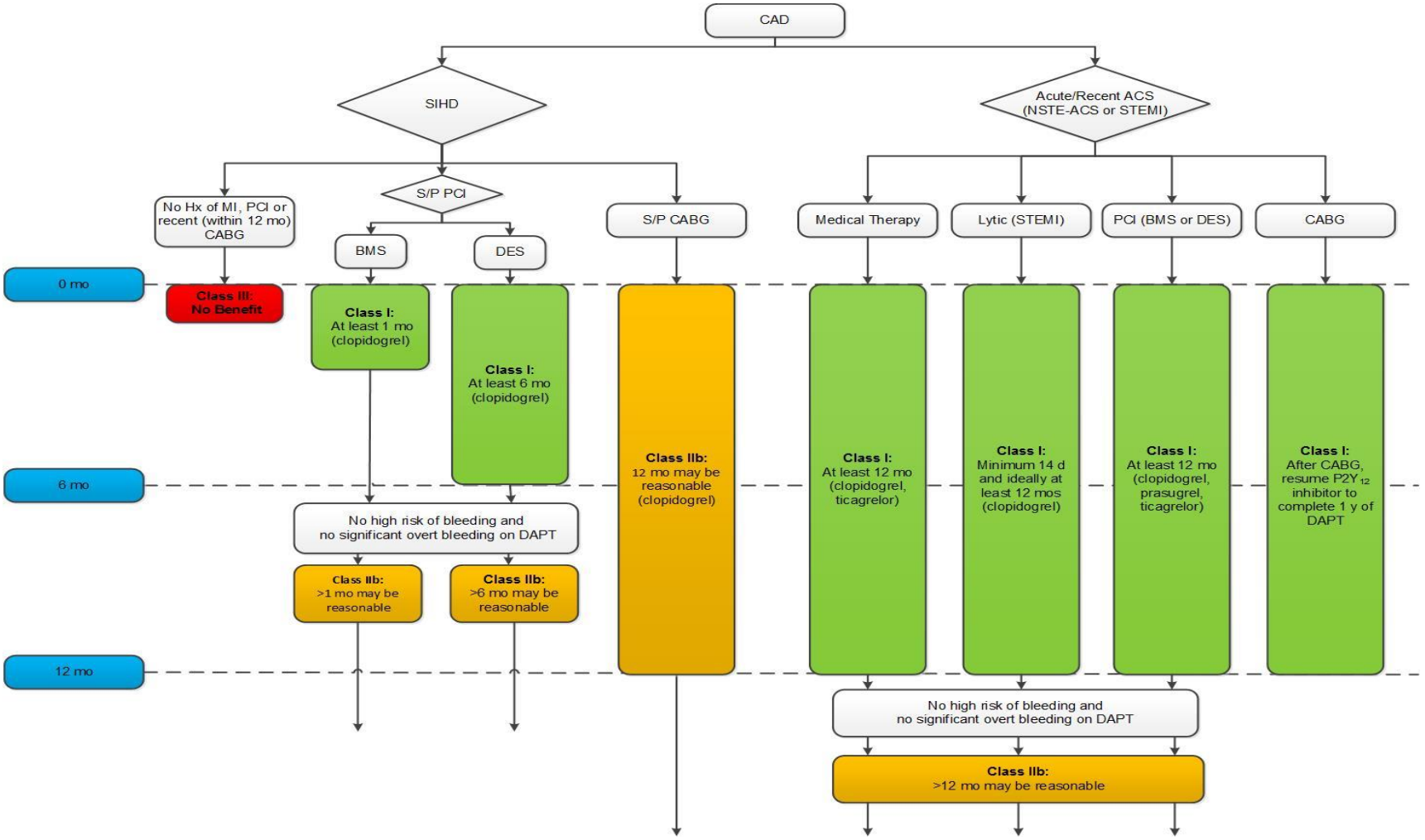
Figure 1. Master Treatment Algorithm for Duration of $P2Y_{12}$ Inhibitor Therapy in Patients With CAD Treated With DAPT



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Overriding Concepts and Recommendations for DAPT and Duration of Therapy

- Specific $P2Y_{12}$ Inhibitors
- Aspirin Dosing in Patients Treated With DAPT

Overriding Concepts and Recommendations for DAPT and Duration of Therapy

Specific $P2Y_{12}$ Inhibitors

Specific $P2Y_{12}$ Inhibitors

COR	LOE	Recommendations
IIa	B-R	In patients with ACS (NSTE-ACS or STEMI) treated with DAPT after coronary stent implantation and in patients with NSTE-ACS treated with medical therapy alone (without revascularization), it is reasonable to use ticagrelor in preference to clopidogrel for maintenance $P2Y_{12}$ inhibitor therapy.
IIa	B-R	In patients with ACS (NSTE-ACS or STEMI) treated with DAPT after coronary stent implantation who are not at high risk for bleeding complications and who do not have a history of stroke or TIA, it is reasonable to choose prasugrel over clopidogrel for maintenance $P2Y_{12}$ inhibitor therapy.
III: Harm	B-R	Prasugrel should not be administered to patients with a prior history of stroke or TIA.

Overriding Concepts and Recommendations for DAPT and Duration of Therapy

Aspirin Dosing in Patients Treated With DAPT

Aspirin Dosing in Patients Treated With DAPT

COR	LOE	Recommendation
I	B-NR	In patients treated with DAPT, a daily aspirin dose of 81 mg (range, 75 mg to 100 mg) is recommended.

Percutaneous Coronary Intervention

- Duration of DAPT in Patients With SIHD Treated With PCI
- Duration of DAPT in Patients With ACS Treated With PCI

Duration of DAPT in Patients With SIHD Treated With PCI

Duration of DAPT in Patients With SIHD Treated With PCI

COR	LOE	Recommendations
I	A	In patients with SIHD treated with DAPT after BMS implantation, $P2Y_{12}$ inhibitor therapy (clopidogrel) should be given for a minimum of 1 month.
I	B-R SR	In patients with SIHD treated with DAPT after DES implantation, $P2Y_{12}$ inhibitor therapy (clopidogrel) should be given for at least 6 months.
I	B-NR	In patients treated with DAPT, a daily aspirin dose of 81 mg (range, 75 mg to 100 mg) is recommended.

SR indicates systematic review.

Duration of DAPT in Patients With SIHD Treated With PCI (cont'd)

COR	LOE	Recommendations
IIb	A [SR]	In patients with SIHD treated with DAPT after BMS or DES implantation who have tolerated DAPT without a bleeding complication and who are not at high bleeding risk (e.g., prior bleeding on DAPT, coagulopathy, oral anticoagulant use), continuation of DAPT with clopidogrel for longer than 1 month in patients treated with BMS or longer than 6 months in patients treated with DES may be reasonable.
IIb	C-LD	In patients with SIHD treated with DAPT after DES implantation who develop a high risk of bleeding (e.g., treatment with oral anticoagulant therapy), are at high risk of severe bleeding complication (e.g., major intracranial surgery), or develop significant overt bleeding, discontinuation of $P2Y_{12}$ inhibitor therapy after 3 months may be reasonable.

SR indicates systematic review.

Duration of DAPT in Patients With ACS Treated With PCI

Duration of DAPT in Patients With ACS Treated With PCI

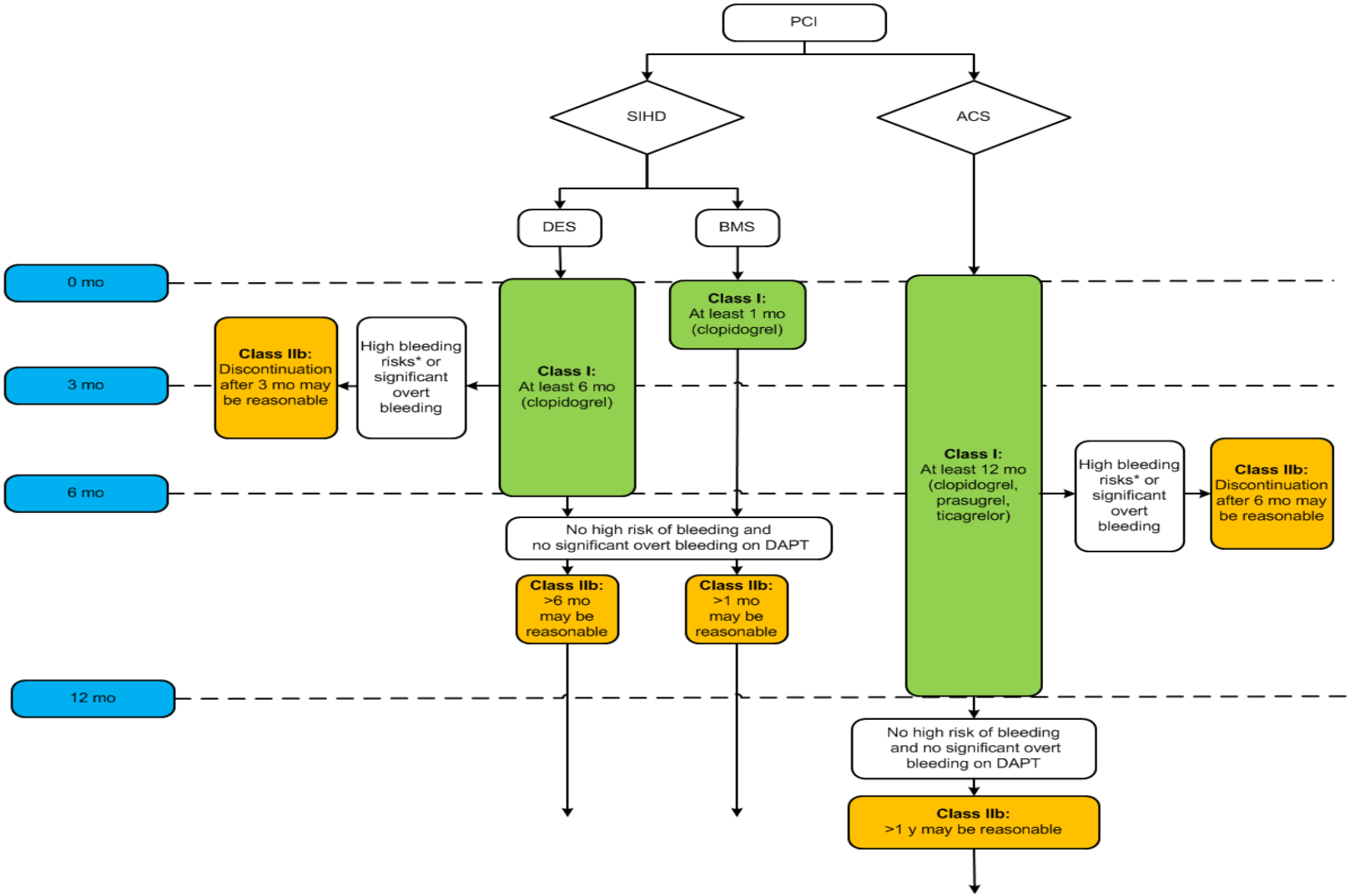
COR	LOE	Recommendations
I	B-R	In patients with ACS (NSTE-ACS or STEMI) treated with DAPT after BMS or DES implantation, $P2Y_{12}$ inhibitor therapy (clopidogrel, prasugrel, or ticagrelor) should be given for at least 12 months.
I	B-NR	In patients treated with DAPT, a daily aspirin dose of 81 mg (range, 75 mg to 100 mg) is recommended.
IIa	B-R	In patients with ACS (NSTE-ACS or STEMI) treated with DAPT after coronary stent implantation, it is reasonable to use ticagrelor in preference to clopidogrel for maintenance $P2Y_{12}$ inhibitor therapy.
IIa	B-R	In patients with ACS (NSTE-ACS or STEMI) treated with DAPT after coronary stent implantation who are not at high risk for bleeding complications and who do not have a history of stroke or TIA, it is reasonable to choose prasugrel over clopidogrel for maintenance $P2Y_{12}$ inhibitor therapy.

Duration of DAPT in Patients With ACS Treated With PCI (cont'd)

COR	LOE	Recommendations
IIb	A [SR]	In patients with ACS (NSTE-ACS or STEMI) treated with coronary stent implantation who have tolerated DAPT without a bleeding complication and who are not at high bleeding risk (e.g., prior bleeding on DAPT, coagulopathy, oral anticoagulant use), continuation of DAPT (clopidogrel, prasugrel, or ticagrelor) for longer than 12 months may be reasonable .
IIb	C-LD	In patients with ACS treated with DAPT after DES implantation who develop a high risk of bleeding (e.g., treatment with oral anticoagulant therapy), are at high risk of severe bleeding complication (e.g., major intracranial surgery), or develop significant overt bleeding, discontinuation of $P2Y_{12}$ inhibitor therapy after 6 months may be reasonable.
III: Harm	B-R	Prasugrel should not be administered to patients with a prior history of stroke or TIA.

SR indicates systematic review.

Figure 2. Treatment Algorithm for Duration of $P2Y_{12}$ Inhibitor Therapy in Patients Treated With PCI



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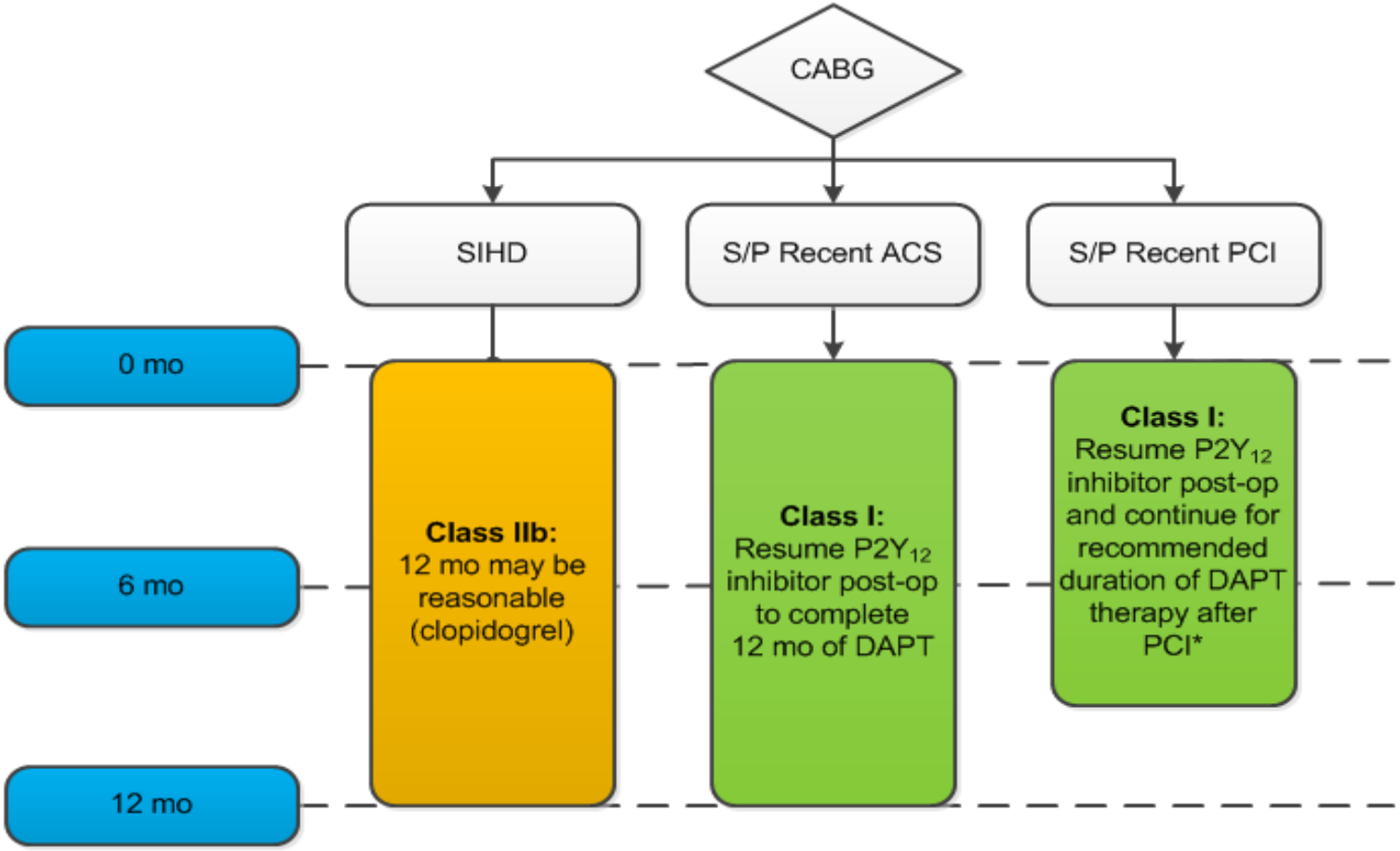
2016 ACC/AHA Duration of DAPT Guideline Focused Update

Coronary Artery Bypass Graft

Recommendations for Duration of DAPT in Patients Undergoing CABG

COR	LOE	Recommendations
I	C-EO	In patients treated with DAPT after coronary stent implantation who subsequently undergo CABG, $P2Y_{12}$ inhibitor therapy should be resumed postoperatively so that DAPT continues until the recommended duration of therapy is completed.
I	C-LD	In patients with ACS (NSTE-ACS or STEMI) being treated with DAPT who undergo CABG, $P2Y_{12}$ inhibitor therapy should be resumed after CABG to complete 12 months of DAPT therapy after ACS.
I	B-NR	In patients treated with DAPT, a daily aspirin dose of 81 mg (range, 75 mg to 100 mg) is recommended.
IIb	B-NR	In patients with SIHD, DAPT (with clopidogrel initiated early postoperatively) for 12 months after CABG may be reasonable to improve vein graft patency.

Figure 3. Treatment Algorithm for Management and Duration of $P2Y_{12}$ Inhibitor Therapy in Patients Undergoing CABG



Stable Ischemic Heart Disease

Recommendations for Duration of DAPT in Patients with SIHD

COR	LOE	Recommendations
I	A	In patients with SIHD treated with DAPT after BMS implantation, $P2Y_{12}$ inhibitor therapy (clopidogrel) should be given for a minimum of 1 month.
I	B-R SR	In patients with SIHD treated with DAPT after DES implantation, $P2Y_{12}$ inhibitor therapy (clopidogrel) should be given for at least 6 months.
I	B-NR	In patients treated with DAPT, a daily aspirin dose of 81 mg (range, 75 mg to 100 mg) is recommended.
IIb	A SR	In patients with SIHD being treated with DAPT for an MI that occurred 1 to 3 years earlier who have tolerated DAPT without a bleeding complication and who are not at high bleeding risk (e.g., prior bleeding on DAPT, coagulopathy, oral anticoagulant use), further continuation of DAPT may be reasonable.

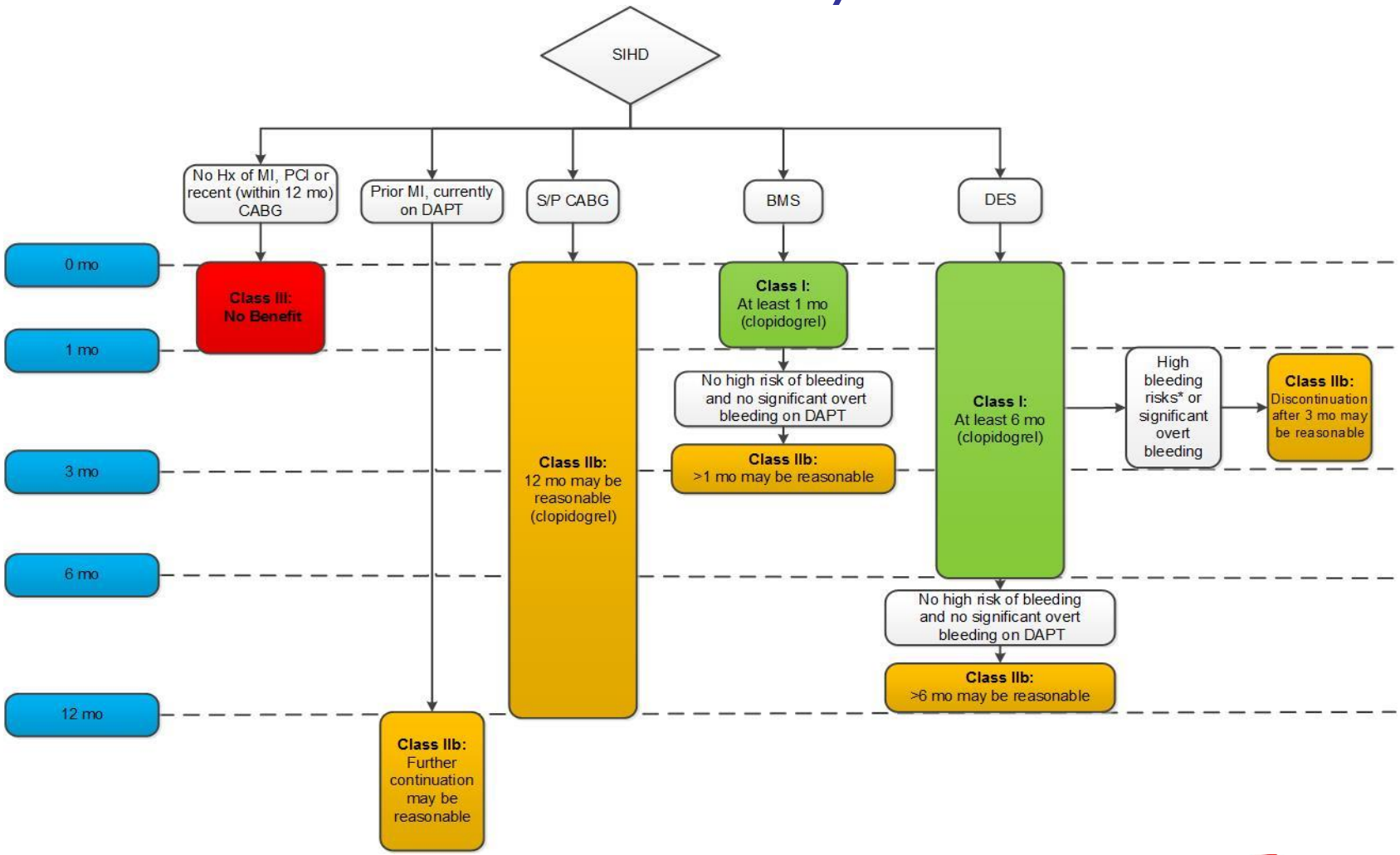
SR indicates systematic review.

Recommendations for Duration of DAPT in Patients with SIHD (cont'd)

COR	LOE	Recommendations
IIb	A [SR]	In patients with SIHD treated with BMS or DES implantation who have tolerated DAPT without a bleeding complication and who are not at high bleeding risk (e.g., prior bleeding on DAPT, coagulopathy, oral anticoagulant use), continuation of DAPT with clopidogrel for longer than 1 month in patients treated with BMS or longer than 6 months in patients treated with DES may be reasonable.
IIb	C-LD	In patients with SIHD treated with DAPT after DES implantation who develop a high risk of bleeding (e.g., treatment with oral anticoagulant therapy), are at high risk of severe bleeding complication (e.g., major intracranial surgery), or develop significant overt bleeding, discontinuation of $P2Y_{12}$ inhibitor therapy after 3 months may be reasonable.
IIb	B-NR	In patients with SIHD, treatment with DAPT (with clopidogrel initiated early postoperatively) for 12 months after CABG may be reasonable to improve vein graft patency.
III: No Benefit	B-R	In patients with SIHD without prior history of ACS, coronary stent implantation, or recent (within 12 months) CABG, treatment with DAPT is not beneficial.

SR indicates systematic review.

Figure 4. Treatment Algorithm for Duration of $P2Y_{12}$ Inhibitor Therapy in Patients With SIHD (Without ACS Within the Past Several Years)



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2016 ACC/AHA Duration of DAPT Guideline Focused Update

Acute Coronary Syndrome (NSTE-ACS and STEMI)

- Duration of DAPT in Patients With ACS Treated With Medical Therapy Alone
- Duration of DAPT in Patients With STEMI Treated With Fibrinolytic Therapy
- Duration of DAPT in Patients With ACS Treated With PCI
- Duration of DAPT in Patients With ACS Treated With CABG

Duration of DAPT in Patients With ACS Treated With Medical Therapy Alone

Duration of DAPT in Patients With ACS Treated With Medical Therapy Alone

COR	LOE	Recommendations
I	B-R	In patients with ACS who are managed with medical therapy alone (without revascularization or fibrinolytic therapy) and treated with DAPT, $P2Y_{12}$ inhibitor therapy (clopidogrel or ticagrelor) should be continued for at least 12 months.
I	B-NR	In patients treated with DAPT, a daily aspirin dose of 81 mg (range, 75 mg to 100 mg) is recommended.
IIa	B-R	In patients with NSTE–ACS who are managed with medical therapy alone (without revascularization or fibrinolytic therapy) and treated with DAPT, it is reasonable to use ticagrelor in preference to clopidogrel for maintenance $P2Y_{12}$ inhibitor therapy.
IIb	A [SR]	In patients with ACS treated with medical therapy alone (without revascularization or fibrinolytic therapy) who have tolerated DAPT without bleeding complication and who are not at high bleeding risk (e.g., prior bleeding on DAPT, coagulopathy, oral anticoagulant use), continuation of DAPT for longer than 12 months may be reasonable.

SR indicates systematic review.

Duration of DAPT in Patients With STEMI Treated With Fibrinolytic Therapy

Duration of DAPT in Patients With STEMI Treated With Fibrinolytic Therapy

COR	LOE	Recommendations
I	A	In patients with STEMI treated with DAPT in conjunction with fibrinolytic therapy, $P2Y_{12}$ inhibitor therapy (clopidogrel) should be continued for a minimum of 14 days (*Level of Evidence: A*) and ideally at least 12 months (*Level of Evidence: C-EO*).
	C-EO	
I	B-NR	In patients treated with DAPT, a daily aspirin dose of 81 mg (range, 75 mg to 100 mg) is recommended.
IIb	A [SR]	In patients with STEMI treated with fibrinolytic therapy who have tolerated DAPT without bleeding complication and who are not at high bleeding risk (e.g., prior bleeding on DAPT, coagulopathy, oral anticoagulant use), continuation of DAPT for longer than 12 months may be reasonable.

SR indicates systematic review.

Acute Coronary Syndrome (NSTE-ACS and STEMI)

Duration of DAPT in Patients With ACS Treated With PCI

Duration of DAPT in Patients With ACS Treated With PCI

COR	LOE	Recommendations
I	B-R	In patients with ACS treated with DAPT after BMS or DES implantation, $P2Y_{12}$ inhibitor therapy (clopidogrel, prasugrel, or ticagrelor) should be given for at least 12 months.
I	B-NR	In patients treated with DAPT, a daily aspirin dose of 81 mg (range, 75 mg to 100 mg) is recommended.
IIa	B-R	In patients with ACS treated with DAPT after coronary stent implantation, it is reasonable to use ticagrelor in preference to clopidogrel for maintenance $P2Y_{12}$ inhibitor therapy.
IIa	B-R	In patients with ACS treated with DAPT after coronary stent implantation, who are not at high risk for bleeding complications and who do not have a history of stroke or TIA, it is reasonable to choose prasugrel over clopidogrel for maintenance $P2Y_{12}$ inhibitor therapy.

Duration of DAPT in Patients With ACS Treated With PCI (cont'd)

COR	LOE	Recommendations
IIb	A [SR]	In patients with ACS treated with coronary stent implantation who have tolerated DAPT without bleeding complication and who are not at high bleeding risk (e.g., prior bleeding on DAPT, coagulopathy, oral anticoagulant use) continuation of DAPT for longer than 12 months may be reasonable.
IIb	C-LD	In patients with ACS treated with DAPT after DES implantation who develop a high risk of bleeding (e.g., treatment with oral anticoagulant therapy), are at high risk of severe bleeding complication (e.g., major intracranial surgery), or develop significant overt bleeding, discontinuation of $P2Y_{12}$ therapy after 6 months may be reasonable.
III: Harm	B-R	Prasugrel should not be administered to patients with a prior history of stroke or TIA.

SR indicates systematic review.

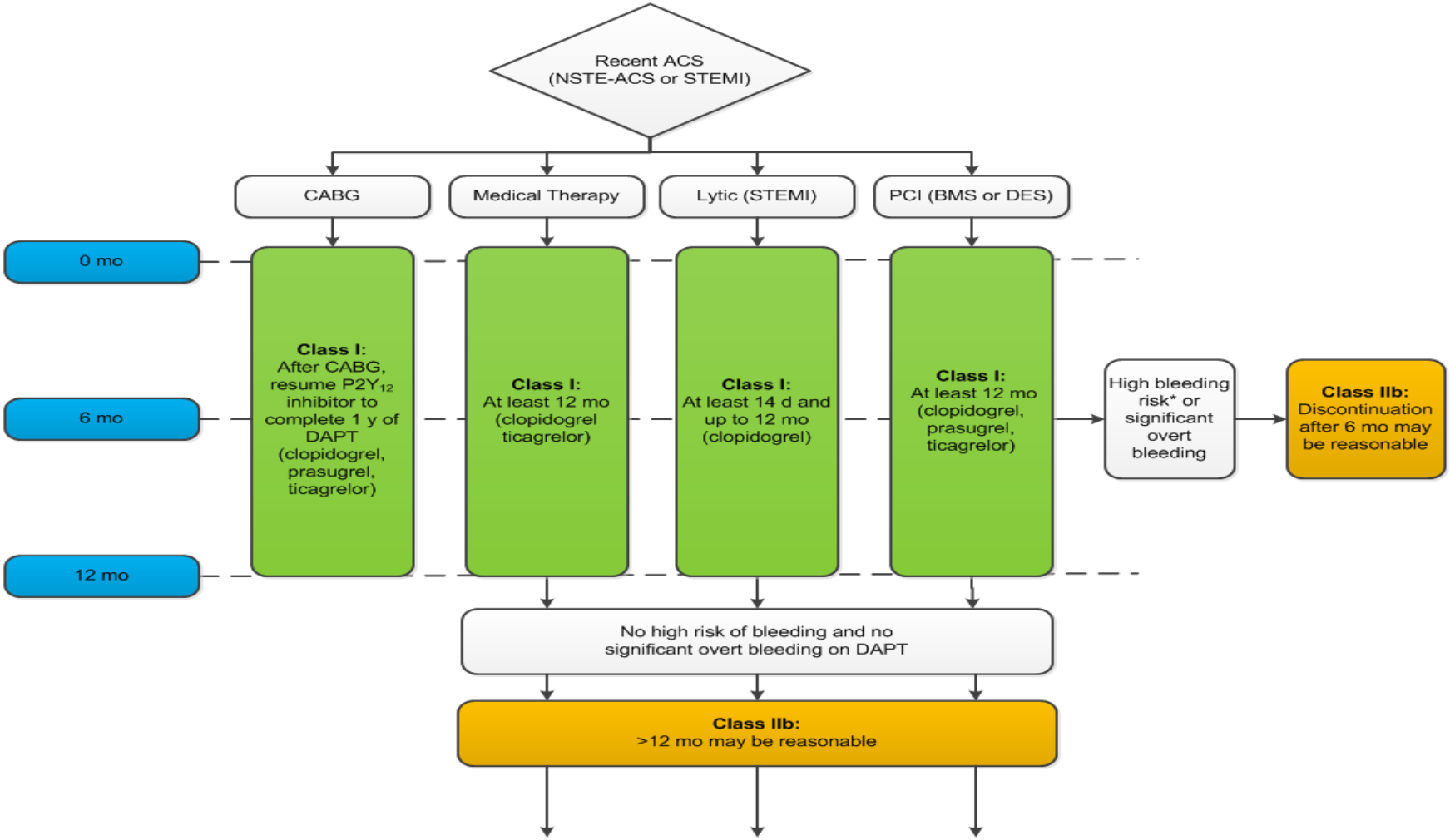
Acute Coronary Syndrome (NSTE-ACS and STEMI)

Duration of DAPT in Patients With ACS Treated With CABG

Duration of DAPT in Patients With ACS Treated With CABG

COR	LOE	Recommendation
I	C-LD	In patients with ACS being treated with DAPT who undergo CABG, $P2Y_{12}$ inhibitor therapy should be resumed after CABG to complete 12 months of DAPT therapy after ACS.

Figure 5. Treatment Algorithm for Duration of $P2Y_{12}$ Inhibitor Therapy in Patient With Recent ACS (NSTE-ACS or STEMI)



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Perioperative Management–
Timing of Elective Noncardiac Surgery in Patients Treated With PCI and DAPT

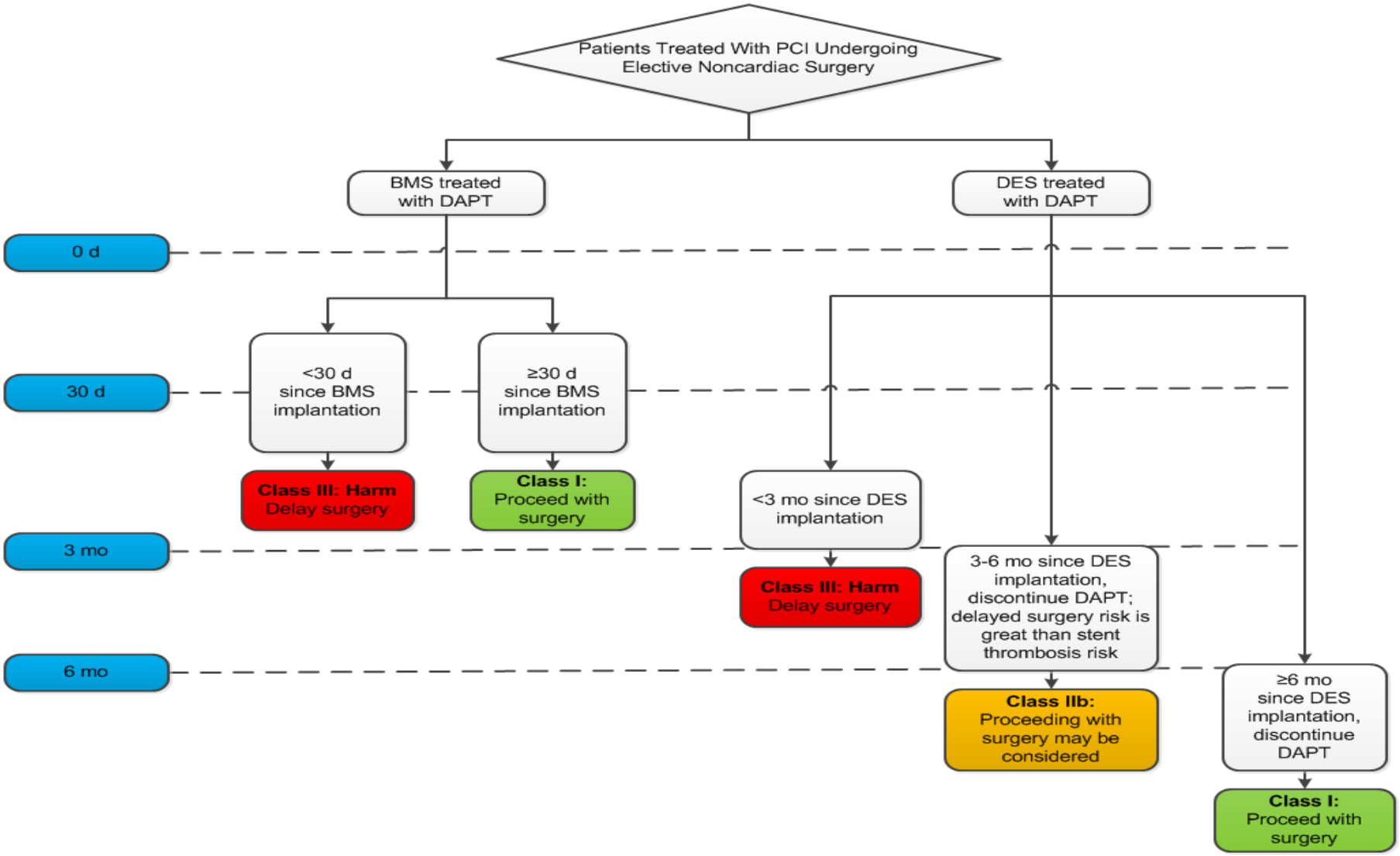
Perioperative Management–Timing of Elective Noncardiac Surgery in Patients Treated With PCI and DAPT

COR	LOE	Recommendations
I	B-NR	Elective noncardiac surgery should be delayed 30 days after BMS implantation and optimally 6 months after DES implantation.
I	C-EO	In patients treated with DAPT after coronary stent implantation who must undergo surgical procedures that mandate the discontinuation of $P2Y_{12}$ inhibitor therapy, it is recommended that aspirin be continued if possible and the $P2Y_{12}$ platelet receptor inhibitor be restarted as soon as possible after surgery.
IIa	C-EO	When noncardiac surgery is required in patients currently taking a $P2Y_{12}$ inhibitor, a consensus decision among treating clinicians as to the relative risks of surgery and discontinuation or continuation of antiplatelet therapy can be useful.

Perioperative Management–Timing of Elective Noncardiac Surgery in Patients Treated With PCI and DAPT (cont'd)

COR	LOE	Recommendations
IIb	C-EO	Elective noncardiac surgery after DES implantation in patients for whom $P2Y_{12}$ inhibitor therapy will need to be discontinued may be considered after 3 months if the risk of further delay of surgery is greater than the expected risks of stent thrombosis.
III: Harm	B-NR	Elective noncardiac surgery should not be performed within 30 days after BMS implantation or within 3 months after DES implantation in patients in whom DAPT will need to be discontinued perioperatively.

Figure 6. Treatment Algorithm for the Timing of Elective Noncardiac Surgery in Patients With Coronary Stents



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