Cardiovascular Health Nova Scotia Guideline Update

Nova Scotia Guidelines for Acute Coronary Syndromes (Updating the 2008 Antiplatelet Section of the Guidelines)

Authors: Dr. M. Love, Dr. I. Bata, K. Harrigan

Reviewers: Dr. A. Clarke, Dr. Paul MacDonald, Dr. Dr. Evan Merrick, Dr. Graham Miles, Dr. M. Perk, Dr. J. Ratushny, Dr. R. Sharrbaf, Dr. J. Yung

ST Elevation Myocardial Infarction-Acute Coronary Syndrome Guidelines: Antiplatelet Update (May 20, 2014)

2008 Recommendation		2014 Update Recommendation		Rationale for change
Immediate Treatment of Suspected STEMI				
9 Antiplatelet therapy		**9 Antiplatelet therapy**		
9a	Acetylsalicylic acid (ASA) (160-325 mg non-enteric coated (EC) oral loading dose, ~~followed by 81 mg once daily [OD]~~ should be administered immediately to all patients with suspected STEMI who do not have contraindications to ASA therapy and who have not been taking aspirin previously. [Class 1 Level C[1]] Patients with contraindications to ASA, regardless of age, should be treated immediately with clopidogrel (300 mg oral loading dose). [*Class IIa, Level C*[1]]	**9a (*Updated)***	Acetylsalicylic (ASA) (160–325 mg non-enteric coated oral loading dose) should be administered immediately to all patients with suspected ACS who do not have contraindications and who have not been taking ASA previously [*Class 1 Level B*[2]*; Class 1 Level B*[3]] Patients with contraindications to ASA should be treated immediately with clopidogrel (300 mg oral loading dose). [*Class I, Level B* [3]]	Modified Recommendation (changed text)
9b	In addition to ASA, all STEMI patients undergoing primary PCI [*Class 1 Level A*[1]] and STEMI	**9b (*Split into two recommendations regarding***	*STEMI patients receiving fibrinolytic therapy* should receive clopidogrel in addition	Modified recommendations (changed text)

2008 Recommendation		2014 Update Recommendation		Rationale for change
	patients ≤ 75 years of age receiving thrombolysis [*Class IIa, Level C*[4]] should receive an immediate 300 mg loading dose of clopidogrel. STEMI patients > 75 years of age receiving thrombolysis should receive an immediate dose of 75 mg of clopidogrel[5] [*Consensus Nova Scotia 2007*]	***clopidogrel with 9b Fibrinolysis and 9c primary PCI*)**	to ASA. • STEMI patients ≤75 years of age receiving fibrinolysis should receive an immediate 300 mg loading dose of clopidogrel. [*Class I, Level A*[2][3]] • STEMI patients >75 years of age receiving fibrinolysis should receive an immediate dose of 75 mg of clopidogrel.[*Class 1, Level A*[3][4]]	
9b	In addition to ASA, all STEMI patients undergoing primary PCI [*Class 1 Level A*[1]] and STEMI patients < 75 years of age receiving thrombolysis [*Class IIa, Level C*[4]] should receive an immediate 300 mg loading dose of clopidogrel. STEMI patients > 75 years of age receiving thrombolysis should receive an immediate dose of 75 mg of clopidogrel.[5] [*Consensus Nova Scotia 2007*]	**9c (*Primary PCI portion of 9b updated*)**	*STEMI patients undergoing primary PCI* should receive a 300 mg oral loading dose of clopidogrel in addition to ASA prior to cardiac catheterization laboratory arrival. [*Strong recommendation, high- quality evidence*[6]] • At the discretion of the on-call interventional cardiologist, a higher loading dose of clopidogrel may be considered in high-risk patients being triaged immediately to the cardiac catheterization laboratory.[7] • If more rapid and/or a higher degree of platelet inhibition is needed in	Modified recommendations (changed text)

2008 Recommendation		2014 Update Recommendation		Rationale for change
			patients already treated with clopidogrel, cardiac catheterization laboratory administration of a 180 mg oral loading dose of ticagrelor should be considered in the absence of contraindications. [8] [*Strong recommendation, high-quality evidence*[6]]	
		9d (*NEW*)	STEMI patients being medically managed (e.g. too late or high risk for fibrinolysis) who do not have contraindications should generally receive a 300 mg oral loading dose of clopidogrel in addition to ASA. [*Strong recommendation, high-quality evidence*[6]]	New Recommendation
Immediate and Subsequent In-Patient Treatment of STEMI (to start at recommendation 14 now)				
	Antiplatelet therapy		**Antiplatelet therapy**	
14a	ASA (81 mg/day) should be continued throughout the hospital stay ~~and indefinitely post discharge~~ in all patients with definite STEMI and no contraindications. [*Consensus Nova Scotia 2007*]	**14a (*Moved discharge instructions to section 19*)**	ASA (81 mg/day) should be continued throughout the hospital stay in all patients with STEMI who do not have contraindications. [*Class 1, Level A*[2][3]]	Modified Recommendation (changed text)
14b (moved to 19b)	Clopidogrel should be administered in addition to ASA in all STEMI patients undergoing primary PCI (300-mg minimal oral	***14b (New)***	$P2Y_{12}$ inhibitor therapy should be continued throughout the hospital stay in the majority of patients with STEMI who do not	New Recommendation (New $P2Y_{12}$ inhibitor available for primary PCI patients.)

2008 Recommendation		2014 Update Recommendation		Rationale for change
	loading dose, followed by 75 mg OD). [*Class I, Level A*[1]] The subsequent duration of treatment will depend on the type of stent used and patient risk profile: minimum 1 month post bare metal stent; minimum 12 months post drug-eluting stent. [*Consensus Nova Scotia 2007*]		have contraindications [6]. • Patients who undergo primary PCI and are transitioned from clopidogrel to ticagrelor should continue ticagrelor 90 mg BID throughout hospitalization. [*Strong recommendation, moderate-quality evidence*[6]] • The remainder of patients should continue clopidogrel 75 mg PO once daily [OD] throughout hospitalization.[5]] [*Strong recommendation, high-quality evidence [6]]*	
14c	Clopidogrel should be administered in addition to ASA in all STEMI patients treated with thrombolysis (300-mg oral loading dose, followed by 75 mg OD for the duration of hospitalization up to a maximum of 28 days. **Note: 300-mg loading dose should be omitted in patients >75 years**[3] [*Consensus Nova Scotia 2007*]	***Moved to 9b***		
14d	• In patients who subsequently undergo PCI, the duration of clopidogrel treatment will depend on the type of stent	***Moved to section 19***		

2008 Recommendation		2014 Update Recommendation		Rationale for change
	used (as above). [*Consensus Nova Scotia 2007*]			
Role of CABG Surgery (antiplatelet recommendations part of this section)				
17a	Patients with STEMI and cardiogenic shock who have multi-vessel disease should be considered for emergent CABG and possibly left ventricular assist device implantation. [*Class IIa, LevelB* [1]] **Notify the Ventricular Assist Device team by telephone: 902-223-0715.**	**17a (*NEW*)**	In STEMI patients found to have disease that requires coronary artery bypass grafting (CABG), the timing of CABG should be determined by the patient's coronary anatomy and by their clinical status.[9]	New Recommendation
17b	Patients who undergo coronary angiography after STEMI and have	**17b (*Formerly 17a*)**	Patients with STEMI and cardiogenic shock and multi-	Modified recommendation (changed recommendation number)

2008 Recommendation		2014 Update Recommendation		Rationale for change
	anatomy suitable for CABG should be referred promptly for consideration for surgery. In particular, patients with critical left main or left main equivalent disease and multi-vessel disease with a reduced left ventricular ejection fraction (LVEF) should be considered for CABG. [*Class I, Level A*[1]]		vessel disease should be considered for emergent CABG[10] [*Class 1 Level B* [2]] and possibly left ventricular assist device implantation.[*Class IIb Level C* [2]] **Page the Ventricular Assist Device team through locating: 902-473-2220.**	
17c	Patients with mechanical complications after STEMI (i.e. papillary muscle rupture, ischemic ventricular septal defect) should be referred emergently for surgical management. [*Class IIa Level B*[1]] .	**17c (*Streamlined*)**	Patients with STEMI and other high-risk angiographic or clinical features should undergo CABG as soon as possible prior to hospital discharge. The timing of surgery should be determined by weighing the risk of bleeding associated with immediate surgery versus the ischemic risk associated with deferred surgery. [9] [AAPI Consensus 2012[6]]	Modified recommendation (changed text)
		17d (*NEW)*	STEMI patients without high-risk features who stabilize with initial medical therapy can potentially be discharged and return for surgery on a semi-urgent basis (within 2-4 weeks). Treadmill testing should be considered before discharge to	New Recommendation

2008 Recommendation		2014 Update Recommendation		Rationale for change
			rule out easily inducible ischemia and establish the safety of deferring CABG. [*Consensus 2014*]	
17d	Clopidogrel should be withheld to reduce the risk of bleeding in patients who are deemed to require urgent bypass surgery. [*Class I, Level B*[1]]	**17e (*NEW*)**	If clinical circumstances permit, clopidogrel or ticagrelor should be discontinued 5 days before CABG.[9] [*Strong recommendation, moderate-quality evidence*[6]]	New Recommendation
		17f (*NEW*)	$P2Y_{12}$ inhibitor therapy should be restarted at maintenance dose within 48-72 hours after CABG when deemed safe to do so by the cardiac surgical team.[11] Patients should generally be restarted on the same $P2Y_{12}$ inhibitor that was administered pre-operatively [*Conditional recommendation, low-quality evidence*[11]]	New Recommendation
Pharmacologic Secondary Preventive Therapy				
19 Antiplatelet therapy		**19 Antiplatelet therapy**		
19a	ASA (81–325 mg daily) should be continued indefinitely in all STEMI patients without contraindications. [*Class I, Level B*[1]*; Class I, Level A*[1]] The dose of ASA should be minimized (81 mg daily) in patients also taking clopidogrel or warfarin, to help reduce the risk of bleeding complications.	**19a (*Updated*)**	ASA (81 mg daily) should be continued indefinitely in all STEMI patients without contraindications [Class 1 Level A[2][3]].	Modified Recommendation

2008 Recommendation		2014 Update Recommendation		Rationale for change
19b	Clopidogrel (75 mg OD), in addition to ASA, is recommended on discharge in the absence of contraindications for all STEMI patients who undergo PCI with stent implantation. The duration of clopidogrel therapy should be tailored according to the type of stent used: minimum 1 month post bare metal stent; minimum 12 months post drug-eluting stent. *[Consensus Nova Scotia 2007]*	**19b (*Updated*)**	All STEMI patients who undergo PCI should continue $P2Y_{12}$ inhibitor therapy following discharge. [*Strong recommendation, moderate-quality evidence*[6][11]] • The choice of agent and duration of therapy will depend upon the mode of reperfusion and the type of stent inserted. [*Consensus Nova Scotia 2014*] • Ticagrelor 90 mg PO BID is only indicated in STEMI patients undergoing primary PCI and should be continued for 12 months irrespective of the type of stent inserted.[8] [*Class 1 Level B*[2]] • The remainder of STEMI patients undergoing PCI should receive clopidogrel 75 mg PO OD. [*Strong recommendation, high-quality evidence* [6]] • Patients receiving bare metal stents should generally continue clopidogrel for a minimum of one month. [*Class 1 Level C*[3]]	

2008 Recommendation		2014 Update Recommendation		Rationale for change
			• Patients receiving drug-eluting stents should generally continue clopidogrel for a minimum of 12 months. [*Class 1 Level B*[2]]	
		19c (*NEW*)	In STEMI patients who are medically managed, there is no evidence to support continuation of clopidogrel beyond 2-4 weeks.[5] [*Consensus Nova Scotia 2014*]	New Recommendation
		19d (*NEW*)	In STEMI patients who undergo CABG and are restarted on clopidogrel post-operatively should generally continue therapy for 12 months. [*Strong recommendation, moderate-quality evidence*[11]]	New Recommendation

References:

[1] Antman EM, Anbe DT, Armstrong PW, et al. ACC/AHA guidelines for the management of patients with ST-elevation myocardial infarction – executive summary: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 1999 Guidelines for the Management of Patients With Acute Myocardial Infarction). *Circulation*. 2004;110(5):588-636.

[2] O'Gara PT, Kushner FG,Ascheim DD, et al. ACCF/AHA guidelines for the management of ST-elevation myocardial infarction – executive summary: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines *J Am Coll Cardiol*. 2013; 61(4):1-26.

[3] Steg, G, James SK, Atar D, et al; for the Task Force on the management of ST-segment elevation acute myocardial infarction of the European Society of Cardiology (ESC). ESC Guidelines for the management of acute myocardial infarction in patients presenting with ST-segment elevation. *Eur Heart J.* 2012; 3(20):2569-2619.

[4] Antman EM, Hand M, Armstrong PW, et al. 2007 Focused Update of the ACC/AHA 2004 Guidelines for the Management of Patients with ST-Elevation Myocardial Infarction. *Circulation.* 2008; 117(2):296-329.

[5] Chen ZM, Jiang LX, Chen YP, et al. Addition of clopidogrel to aspirin in 45852 patients with acute myocardial infarction: randomised placebo controlled trial. *Lancet.* 2005;366:1607-162.

[6] Love MP, Bergin P, Paddock V, et al. Atlantic Canadian Guidelines for the acute use of oral antiplatelet therapy in patients with Acute Coronary Syndromes: Atlantic Cardiovascular Society. April 18, 2012. Available at http://ac-society.org/cms/node/45. Accessed July 23, 2013.

[7] Mehta SR, Tanguay JF, Eikelboom JW, et al. Double-dose versus standard-dose clopidogrel and high-dose versus low-dose aspirin in individuals undergoing percutaneous coronary intervention for acute coronary syndromes (CURRENT-OASIS 7): a randomised factorial trial. *Lancet*. 2010; 376: 1233–1243.

[8] Wallentin L, Becker RC, Budaj A, et al. Ticagrelor versus clopidogrel in patients with acute coronary syndromes. *N Engl J Med.* 2009; 361:1045-57.

[9] Fitchett DH, Eikelboom J, Fremes S, et al. Dual antiplatelet therapy in patients requiring urgent coronary artery bypass grafting surgery: A position statement of the Canadian Cardiovascular Society. *Can J Cardiol*. 2009; 25(12):683-689.

[10] Hochman JS, Sleeper LA, Webb JG, et al. Early revascularization in acute myocardial infarction complicated by cardiogenic shock. *N Engl J Med*. 1999; 341:625-634.

[11] Tanguay JF, Bell AD, Ackman ML, et al. Focused 2012 update of the Canadian Cardiovascular Society Guidelines for the use of antiplatelet therapy. *Can J Cardiol.* 2013; 29(11):1334-1345.