

Post stent care – Guidelines for managing patients who have had percutaneous coronary intervention (PCI).



**Author: Dr Chris Judkins
Interventional Cardiologist
WA Cardiology and Fiona Stanley Hospital**

Management of the patient after PCI is as important as the stenting procedure itself. Care will differ from patient to patient depending on factors such as whether their stent was elective or following a myocardial infarction. However by definition anyone with established coronary disease is high risk. This group of patients will benefit the most from aggressive risk factor management.

Medications post Acute Coronary Syndrome (ACS) or PCI.

On hospital discharge patients should be on these 5 medications:

1. DAPT (dual antiplatelet therapy – Aspirin and either clopidogrel or ticagrelor),
2. Beta blocker,
3. ACE-I/ARB and a
4. Statin

Doses are up-titrated rapidly in hospital but may need adjustment following discharge when seen for the first follow-up GP visit. The aim is to up-titrate to the maximal tolerated doses. Both Aspirin and a moderate to high dose statin will confer a 25% risk reduction for further events. ACE-I/ARB and Beta blockers may be discontinued after 12 months as long as there is no other reason for their prescription (eg Elevated blood pressure or impaired LV function).

How long to continue “Dual antiplatelet therapy – DAPT”?

The table below outlines the length that DAPT should be continued in general. This may be varied in some circumstances and will be detailed in the hospital discharge summary.

Intervention	Duration of DAPT
Balloon Angioplasty	1 to 3 months
Bare Metal Stent	3 to 4 months
Drug Eluting Stent	12 months
Complex Stenting or high risk anatomy	Indefinite
Bioresorbable stents	12 months (recommended)
Patients post MI who have not had PCI	3 to 12 months (depending on risk of thrombosis)

Ref 1: P Thompson, C Judkins, A Thompson. Medical Management after control of Myocardial Ischemia. *Medicine Today*2013;14(3):28-34.

Modern DES have very low rates of in-stent thrombosis - IST (0.6% in 12/12) the feared complication of antiplatelet cessation. There is data that planned early cessation after 3-6 months for some DES is not associated with increased IST and can be safely performed. However this will depend on the complexity of the stenting procedure and the stent received.

Conversely the DAPT trial (ref 2) suggested that continuing DAPT (aspirin and clopidogrel) for 30 months after stenting may be beneficial. Ongoing trials are investigating the benefit of aspirin and ticagrelor beyond 12 months. Discuss management with the treating cardiologist if early temporary cessation is planned otherwise 12 months of DAPT post drug eluting stent would be in line with society guidelines unless the treating cardiologist specifically requests otherwise.

What DAPT combination is commonly used?

Most patients with an acute coronary syndrome (ACS) will be commenced on combination aspirin and ticagrelor (Brilinta). Elective stenting or high risk bleeding patients may be on aspirin and clopidogrel.

Medication	Loading dose	Maintenance dose	PBS Codes	
Aspirin	300mg	75-150mg od	na	
AND ONE OF			Post PCI	Post ACS/PCI
1. Clopidogrel	300-600mg	75mg od	4165	4166
2. Ticagrelor	180mg	90mg bd	Na ¹ .	3879
3. Prasugrel	60mg	10mg od	Na ¹ .	3208
Or Coplavix	Na	100/75	3219	3880

¹Ticagrelor and Prasugrel are not approved following elective PCI for stable angina

My patient has Atrial Fibrillation and needs DAPT. What do I do?

This is a difficult area. The WOEST trial (ref 3) and Danish registry (ref 4) provide some reassurance that warfarin and clopidogrel alone are safe immediately post PCI however guidelines still recommend triple therapy (warfarin, aspirin and clopidogrel) for “the shortest duration possible”. It may be reasonable to run the INR between a lower range of 2.0 and 2.5 while on triple therapy. There is limited data on the efficacy or safety of combining DAPT and one of the novel oral anticoagulants (NOACs) with no RCTs performed. Take the advice of the treating cardiologist and call to discuss if required. In general however Warfarin and Clopidogrel should be continued after the initial triple therapy period which should be for 6 weeks or less. A NOAC and clopidogrel may be prescribed by some cardiologists. If in doubt, call for advice.

My patient needs an operation and is on DAPT. What do I do?

The advice above holds here. 12 months of DAPT after a drug eluting stent (DES) is recommended. If an operation can be postponed do so. If not then planned temporary early cessation after 3-6 months can reasonably safely be performed for some DES. Again always discuss management with the treating cardiologist before ceasing DAPT prematurely.

What are the guidelines re: driving post AMI/PCI?

The table below details the recommended non-driving periods after an ACS and or PCI implantation/CABG. All patients will be given these instructions prior to discharge.

	Private Vehicle	Commercial Vehicle
Ischemic Heart Disease		
Acute Myocardial Infarction	2 weeks	4 weeks
Percutaneous Coronary Intervention	2 days	4 weeks
Coronary Artery bypass Grafts	4 weeks	3 months
Disorders of Rate, Rhythm or Conduction		
Cardiac Arrest	6 months	6 months
Implantable cardiac defibrillator (ICD)	6 months after cardiac arrest	Not applicable
ICD generator change	2 weeks	Not applicable
ICD Shock with hemodynamic compromise	4 weeks	Not applicable
Cardiac Pacemaker Insertion	2 weeks	4 weeks
Vascular Disease		
Aneurysm repair	4 weeks	3 months
Valvular Replacement	4 weeks	3 months
Other		
Deep Vein Thrombosis	2 weeks	2 weeks
Heart/Lung Transplant	6 weeks	3 months
Pulmonary Embolism	6 weeks	6 weeks
Syncope	4 weeks	3 months

What are the guidelines regarding physical activity post AMI/PCI?

Physical activity is very important post AMI/PCI/CABG. As a general rule patients should take it easy for the first day or two post PCI but then start to exercise. The aim is be exercising for 30-40minutes on most days at light to moderate intensity by 4 weeks. This should then be encouraged to decrease future cardiovascular risk. There is increasing data that the greatest Cardiovascular benefit and risk reduction is achieved with this regimen (30-40mins/day light-mod exercise (eg brisk walk) for 4-5 days per week). A common question is around sexual activity. This is permitted and is generally unrestricted if the patient can climb a flight of stairs with ease. Many cardiac rehab programs exist through public hospitals, Medicare locals (eg heartbeat), or privately. Rehabilitation is an important part of post stent care and the feedback from patients is usually very good.

Where can I get more advice?

There are many high quality sources of information available. For links and further information see www.perthheart.com a new and evolving WA based education resource for patients and healthcare providers or www.wacardiology.com.au for cardiology referral and advice.

Dr Chris Judkins
Interventional Cardiologist
WA Cardiology

References:

1. P Thompson, C Judkins, A Thompson. "Medical Management after control of Myocardial Ischemia." *Medicine Today* 2013;14(3):28-34
2. Mauri L, Kereiakes D, Yeh R, et al. "Twelve or 30 months of dual antiplatelet therapy after drug eluting stents". *NEJM*. 2014. 371:2155-2166
3. Dewilde WJM, et al. "Use of clopidogrel with or without aspirin in patients taking oral anticoagulant therapy and undergoing percutaneous coronary intervention: An open-label, randomised, controlled trial". *The Lancet*. 2013. 381(9872):1107-1115.
4. Lamberts M, Gislason GH, Olesen JB, et al. Oral anticoagulation and antiplatelets in atrial fibrillation patients after myocardial infarction and coronary intervention. *J Am Coll Cardiol*. 2013.