

## GUIDELINE - ANTIPLATELET AGENTS IN THE PERIOPERATIVE PERIOD

The following draft guidelines are recommendations to guide decision-making with regard to antiplatelet agents in the perioperative period. They are only guidelines, and clinical judgement must be exercised based on the patient's clinical state and surgical situation. Management of perioperative antiplatelet medications is **patient specific**.

### Aspirin

Current recommendations advise that aspirin be **maintained throughout the perioperative period** for patients with coronary artery disease, cerebrovascular disease and peripheral vascular disease.

If there is **no** medical indication the patient should avoid using aspirin for ten days prior to surgery. Paracetamol can be used as a simple analgesic.

If **medically indicated**, low-dose aspirin (75-150mg) should be continued prior to surgery unless the operation is one where antiplatelet agents have a high impact on surgical bleeding complications (see table). For these patients, treatment should be **individually** adjusted in consultation with the surgeon and cardiologist or neurologist.

Withdrawal of aspirin for 10 days is required to totally eliminate the effect of aspirin. Adequate platelet recovery for haemostasis is apparent 3-4 days after cessation.

In the moderate-impact group, the risk of cessation of antiplatelet therapy should be considered carefully.

Withdrawal of aspirin can cause a platelet rebound phenomenon and prothrombotic state leading to major adverse cardiovascular events.

Aspirin is **not** a contraindication to spinal or epidural procedures.

When medically indicated aspirin has been ceased pre-operatively for surgical reasons, it should be given post-operatively as soon as the surgeon agrees. (E.g. 150mg sublingually in recovery.)

### Clopidogrel and dual antiplatelet therapy

Clopidogrel needs to be ceased before many operations (see table). The medical indication for the drug should be considered before cessation. (See list)

For patients with a high thrombotic risk (see list) careful **individualisation** is necessary. Is surgery absolutely necessary? Consider substituting or continuing aspirin peri-operatively. Consult the patient's cardiologist or neurologist for a **peri-operative** management plan. Clexane therapy is probably of little value.

Where cessation is surgically necessary, 5 to 7 days is often long enough to give adequate recovery of platelet effect.

Spinal/epidural anaesthesia is relatively contraindicated within 7 days of clopidogrel.

Early post-operative aspirin or clopidogrel should be given when surgically appropriate.

### NSAIDS

In general, NSAIDs should cease 48 hours prior to surgery. This is primarily as a precaution against nephrotoxicity.

May be given intra- or post-operatively at the anaesthetists discretion.

### Dipyridamole (Persantin) and Dipyridamole/Aspirin (Asasantin)

Dipyridamole acts on vascular smooth muscle and reversibly on platelet activity but does not have clinically significant haemorrhagic complications. Asasantin is a combination of aspirin (25mg) and dipyridamole (200mg), and thus has a relatively minor antiplatelet effect.

**Patients should be informed of the risks of both stopping and continuing antiplatelet agents.**

IMPACT	OPERATION	ASPIRIN	CLOPIDOGREL
<b>High Impact of Antiplatelet Agents on Surgical Bleeding Complications</b>	<ul style="list-style-type: none"> <li>• Intracranial Surgery</li> <li>• Adeno Tonsillectomy</li> <li>• Septo-Rhino-plasty</li> <li>• Middle Ear Surgery</li> <li>• Major ENT</li> <li>• TUR &amp; Open Prostate</li> <li>• Major Urology</li> <li>• Major Spinal Surgery</li> <li>• Major Head &amp; Neck Cancer</li> <li>• Surgery Posterior segment eye</li> <li>• Other surgery as per surgeon</li> </ul>	Cease 10 days pre-operatively	Cease 10 days pre-operatively
		<p><b>The risks of cessation should be carefully considered.</b></p> <p><b>Management should be individualised in consultation with surgeon, cardiologist, and neurologist.</b></p> <p><b>Surgery may need to be postponed if recent coronary artery stenting</b></p>	
	<ul style="list-style-type: none"> <li>• Laminectomy/Discectomy</li> <li>• Thyroidectomy &amp; similar</li> <li>• Facio-maxillary Surgery</li> <li>• Complex Orthopaedics (re-do)</li> </ul>	Consider ceasing aspirin depending on medical indication.	Cease clopidogrel for 7 days. Alternative antiplatelet strategy (e.g. aspirin) may be appropriate.
<b>Acceptable Impact on Surgical Bleeding</b>	<ul style="list-style-type: none"> <li>• Major Joint Surgery*</li> <li>• Other orthopaedics</li> <li>• Gynaecology</li> <li>• General surgery</li> <li>• Thoracic</li> <li>• Cardiac</li> <li>• Tooth extraction</li> </ul> <p>* Individual surgeons opinions differ</p>	Generally continue aspirin (assuming there is a medical indication for the patient to be on aspirin).	Cease clopidogrel for 5 days pre-operatively. Strongly consider giving alternative anti-platelet therapy such as aspirin 100mg/day.

## Medical Indications for Clopidogrel & Aspirin

**Critical/ High Thrombotic Risk** – *antiplatelet therapy should only be ceased if absolutely necessary*

- Drug Eluting Coronary Stent less than 12 months old\*
- Bare Metal Stent less than 6 months old\*
- CVA / AMI / CABG within last 6 months

### Strong

- Drug Eluting Coronary Stent more than 12 months old
- Bare Metal Coronary Stent more than 6-12 months old
- TIA/CVA last 6-12 months
- Unstable Angina within the last 12 months

### Moderate

- Bare Metal Stent more than 12 months old
- TIA / CVA more than 12 months ago
- Antiplatelet therapy for stable ischaemic heart disease

**Low** *Antiplatelet therapy can be ceased whenever necessary.*

\* Especially high risk for stent thrombosis

- Stents at bifurcations, multiple or long stents, or stents in small vessels
- History of stent thrombosis
- Incomplete revascularisation
- Relapse during treatment
- Diabetes mellitus
- Renal failure
- Advanced age
- Patients with low LVEF

## Antiplatelet Agents for Urology Procedures

Procedure	Management
<ul style="list-style-type: none"> <li>Simple cystoscopy</li> </ul>	Continue aspirin and clopidogrel unless instructed otherwise
<ul style="list-style-type: none"> <li>Cystoscopy with diathermy or resection of small bladder tumour</li> <li>Urethral dilatation</li> <li>Optical Urethrotomy</li> <li>BNI</li> <li>Ureteroscopy (including stone disintegration or extraction)</li> </ul>	<ul style="list-style-type: none"> <li>Continue aspirin</li> <li>Cease clopidogrel 5 days pre-operatively in consultation with cardiologist or neurologist</li> </ul>
<ul style="list-style-type: none"> <li>TURP</li> <li>TURBT (large tumours)</li> <li>Major open surgery</li> <li>Intrarenal surgery (including flexible ureteroscopy, PCNL &amp; ESWL)</li> <li>Scrotal surgery</li> </ul>	<p>All antiplatelet agents should be ceased pre-operatively.</p> <p><b>Patient specific management</b> - discuss with surgeon, cardiologist, or neurologist.</p>

NB: If unsure discuss with the urologist and cardiologist or neurologist.

Sprott – aspirin ok for major surgery. Prefers to stop aspirin for TURP's and TURBT's. Clopidogrel to be stopped for everything. Discuss if unsure.

## References

1. Lau JV, Lopez-Forte C, Sapena L and Ferrandis R. Perioperative management of antiplatelet agents in noncardiac surgery. *European Journal of Anaesthesiology* 2009, 26:181-187.
2. Connors JM, Wiener-Kronish JP. Continuing aspirin in the perioperative patient. Editorial. *Annals of Surgery*, Vol. 255, No. 5, May 2012.
3. Gerstein NS, Schulman PM et al. Should more patients continue aspirin therapy perioperatively? *Annals of Surgery*. Vol. 255, No. 5, May 2012.
4. Albaladejo P, Marret E et al. Perioperative management of antiplatelet agents in patients with coronary stents: recommendations of a French task force. *BJA* (2006)97(4):580-582.
5. Hall R, Mazer CD. Antiplatelet Drugs: A Review of their pharmacology and management in the perioperative period. *Anaesthesia and Analgesia*. Feb 2011, Vol. 112, No.2.

## Notes

### Aspirin Withdrawal Syndrome

A growing body of evidence supports a platelet rebound phenomenon in the setting of acute aspirin withdrawal. This results in a prothrombotic state.

A robust body of literature substantiates an increased risk of cardiovascular events during the acute aspirin withdrawal period.

Myocardial infarct is the most common complication post op in patients with risk factors for coronary artery disease. Perioperative MI has a mortality rate of 15-25%.

Collet et al found that a recent withdrawer of antiplatelet therapy had a two fold increase in rates of death. The average time between stopping therapy and a cardiac event was 8-11.9 days,

A recent systematic review of 50,279 patients on aspirin for primary and secondary prevention sought to evaluate the hazards of aspirin withdrawal. In patients with known coronary artery disease the risk of an adverse cardiac event with discontinuation of aspirin was 1.82. There was an average of 10.66 days between discontinuation and the thrombotic event.

Aspirin non adherence or withdrawal was associated with a threefold higher risk of major cardiac events.

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