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Cardiology Guideline

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Antiplatelet and Anticoagulant Guidelines for Coronary Stent Placement

This guideline was created by Intermountain's Cardiovascular Clinical Program, based on multiple publications and expert opinion. It outlines recommendations for antiplatelets and anticoagulants before and after stent placement in elective PCI and in acute coronary syndrome treatment.

ANTIPLATELET / ANTICOAGULANT RECOMMENDATIONS

Appropriate medications are based on the **treatment situation** (elective PCI or acute coronary syndrome), on whether or not the patient is effectively preloaded with a **$P2Y_{12}$ inhibitor** (clopidogrel/Plavix, prasugrel/Effient, or ticagrelor/Brilinta) and on the patient's restenosis vs. bleeding **risk levels**.

Table 1. Antiplatelets/anticoagulants for stent placement

Situation	$P2Y_{12}$ Status	PRE-STENT	Immediately POST-STENT
Elective PCI	***Not relevant***	• Aspirin 325 mg • $P2Y_{12}$ loading:* • Clopidogrel 600 mg ***or*** for high-risk patients, consider Prasugrel 60 mg or Ticagrelor 180 mg • Bivalirudin ***or*** for high-risk patients, consider GP IIB/IIIa antagonist† and UFH	• Aspirin 81 mg or 325 mg daily (81 mg daily if on ticagrelor) • $P2Y_{12}$ inhibitor maintenance (see dosing guidelines below and function testing guidelines on p. 2)

Acute Coronary Syndrome (ACS), including STEMI, NSTEMI	**NO** $P2Y_{12}$ inhibitor effect	• Aspirin 325 mg
		• $P2Y_{12}$ loading*:
		  • Ticagrelor 180 mg ***or***
		  • Prasugrel 60 mg (in NSTEMI, administer after coronary anatomy defined) ***or***
		  • Clopidogrel 600 mg (if Prasugrel and Ticagrelor are contraindicated)
		• GP IIB/IIIa antagonist† and UFH	

	Currently taking $P2Y_{12}$ inhibitor or **effectively LOADED***	• Aspirin 325 mg • Bivalirudin (preferred) ***or*** for high-risk patients, consider GP IIB/IIIa antagonist† and UFH	

Effective $P2Y_{12}$ loading:** ***Clopidogrel: 600 mg dose given $\geq$4 hours prior to stent. ***Prasugrel:*** 60 mg dose given $\geq$2 hours prior to stent. ***Ticagrelor:*** 180 mg dose given $\geq$2 hours prior to stent.

† GP IIB/IIIa antagonist (eptifibatide/tirofiban/abciximab): May consider discontinuing 4 hrs after clopidogrel load or 2 hrs after prasugrel or ticagrelor load. However, consider infusing up to 12–18 hours for highest risk cases. For ACS patients on upstream GP IIB/IIa agent, consider continuing in the peri-stent period.

$P2Y_{12}$ DOSING GUIDELINES

- **Clopidogrel (Plavix):** 600 mg load, then 75 mg daily
- **Prasugrel (Effient):**
  - **Indications:** Consider using if patient is high risk, STEMI, diabetic, or has a history of stent thrombosis.
  - **Contraindications:** Do NOT use if history of stroke/TIA.
  - **Dose** based on age and weight: Age $\leq$ 75 and weight $\geq$ 60 kg: 60 mg load, then 10 mg daily
Age > 75 *or* weight <60 kg: 60 mg load, then 5 mg daily
- **Ticagrelor (Brilinta):**
  - **Indications:** Consider using if high risk, ACS, diabetes, or history of stent thrombosis; preferred over prasugrel if history of stroke, but clopidogrel may be first choice with history of stroke/TIA.
  - **Contraindications:** Do NOT use if active bleeding or history of intracranial hemorrhage
  - **Dose:** 180 mg load, then 90 mg twice daily
  - **Concurrent aspirin dose:** must use only 81 mg daily maintenance dose after 325 mg load

GENERAL REFERENCES

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$P2Y_{12}$ FUNCTION TESTING

Consider platelet reactivity testing for **all ACS and high-risk elective PCI patients, using the VerifyNow $P2Y_{12}$ assay.**

VerifyNow $P2Y_{12}$ assay timing:

- **Early post-stent:** Can order VerifyNow assay:
  - $P2Y_{12}$ (loading): 4 hours after clopidogrel dose or 2 hours after prasugrel/ticagrelor dose
  - $P2Y_{12}$ (maintenance): 1 to 2 hours after daily $P2Y_{12}$ dose
  - Eptifibatide/tirafoban: at least 12 hours after infusion is discontinued (eptifibatide/ tirafoban may shorten PRU up to 48 hours after discontinuing infusion)
  - Abciximab: 4 days after initial dose
- **Ongoing:** Order assay at 2 to 4 weeks on stable home regimen or 2 weeks after any change in dosage. Time the assay for 1 to 2 hours after daily $P2Y_{12}$ dose.

Using assay results, reported as $P2Y_{12}$ Platelet Reactivity Units (PRU):

- If **$P2Y_{12}$ PRU is >200:**
  - If on clopidogrel, switch to prasugrel or ticagrelor (with loading as on previous page), or increase clopidogrel dose (300 mg load, then 150 mg total daily).
  - If on prasugrel, add 5 mg to daily dose.
  - If on ticagrelor, increase dose to 270 mg total daily.
- If **$P2Y_{12}$ PRU is 100 to 200:** Continue current dose.
- If **$P2Y_{12}$ PRU is <100:** Consider decreasing dose by 50%.

These guidelines apply to common clinical circumstances, and may not be appropriate for certain patients and situations. The treating clinician must use judgment in applying guidelines to the care of individual patients.

