

Summary of P2Y₁₂ Inhibitors

	Clopidogrel	Prasugrel	Ticagrelor	Cangrelor ^b
Mechanism of Action	Inhibits ADP-mediated platelet activation at P2Y ₁₂ receptor			
Loading Dose	300-600 mg	60 mg	180 mg	30 mcg/kg
Maintenance Dose	75 mg daily	5-10 mg daily	90 mg twice daily	4 mcg/kg/min
Route	Oral	Oral	Oral	IV
Prodrug	Yes	Yes	No	No
Reversible platelet binding	No	No	Yes	Yes
Onset	2-6 hr	30 min	30 min	2 min
% (ADP) inhibition	30-40	60-70	60-70	>95%
Recommended holding duration before CABG^c	5 days	7 days	5 days ^a	1-6 hr
Other notable adverse effects or clinical pearls	Pharmacogenomic variability (CYP2C19) Caution with CYP2C19 inhibitors, which can affect conversion from prodrug to active isoform	Contraindication in patients with history of stroke or TIA because of increased bleeding risk Warning of use in patients older than 75 or weight less than 60 kg Patients less than 60kg may receive 5 mg MD	Adenosine- induced dyspnea and bradyarrhythmias. Caution with strong CYP3A4 inhibitors/inducer, which can affect ticagrelor clearance Avoid Aspirin > 100mg because lack of efficacy	An oral P2Y ₁₂ antagonist must be given immediately after cangrelor discontinuation to maintain platelet inhibition

a Ticagrelor was held for 24-72 hr in the PLATO trial with no difference in major bleeding with clopidogrel.

b Not on Formulary

c Decisions to hold these agents before other invasive procedures must consider indications for use, risk of thrombosis, and risk of bleeding associated with intended procedure/surgery.

ADP = adenosine diphosphate; IV = intravenous(ly); LD = loading dose; MD = maintenance dose; TIA = transient ischemic attack.

References

Brilakis ES, Patel VG, Banerjee S. Medical management after coronary stent implantation: a review. JAMA 2013;310:189-98; and Baron TH, Kamath PS, McBane RD. Current concepts: management of antithrombotic therapy in patients undergoing invasive procedures. N Engl J Med 2013;368:2113-24