

Medication Safety: Switching P2Y₁₂ Inhibitors



AMERICAN COLLEGE of CARDIOLOGY



- ✘ Oral P2Y₁₂ inhibitors vary in potency and pharmacokinetic and dynamic parameters
- ✘ A meta-analysis of 22,500 patients reported 19.1% rate of switching P2Y₁₂ inhibitors during hospitalization for ACS
 - 79.5% of these were an escalation of therapy and 18.5% a de-escalation
 - No significant difference in 30 day outcomes for cardiac events but increased risk of bleeding (OR 1.6, CI 1.22-2.10)
- ✘ Switching P2Y₁₂ inhibitors during hospitalization for acute coronary syndrome patients (ACS) has been reported at rates ranging from 9 to 24%
- ✘ Drug interactions between P2Y₁₂ inhibitors can lead to inadequate platelet inhibition and risk of thrombotic complications
- ✘ Inappropriate overlap of P2Y₁₂ inhibitors can lead to excessive platelet inhibition and risk of bleeding complications



- In the absence of clear evidence, a 2017 international expert consensus provides recommendations for switching between P2Y₁₂ inhibitors based on:
- ✓ Timing of switch relative to index event that led to initiation of P2Y₁₂ inhibitor
 - ✓ Rationale for switch – particularly if related to bleeding or bleeding risk
 - ✓ Unique pharmaco-dynamic and -kinetic properties of each agent (i.e. potency, reversibility of receptor binding, pro-drug)

TREATMENT TABLES:

Switching Between Intravenous and Oral P2Y ₁₂ Inhibitors	
Intravenous to Oral	
Cangrelor to P	Load P 60 mg immediately after discontinuing cangrelor
Cangrelor to T	Load T 180 mg during infusion or immediately after discontinuing cangrelor
Cangrelor to C	Load C 600 mg immediately after discontinuing cangrelor
Oral to Intravenous (consider platelet function testing to time initiation of cangrelor)	
P to C	Start cangrelor 0.75 mcg/kg/min (without bolus) 3 – 4 days after last P dose
T or C to cangrelor	Start cangrelor 0.75 mcg/kg/min (without bolus) 2 – 3 days after last T or C dose

Switching Among Oral P2Y ₁₂ Inhibitors		
Switch	Within 30 days of index event	> 30 days after index event
Escalation in Potency		
C to P	Re-load with P 60 mg irrespective of timing of last dose	Administer P 10 mg MD 24 hrs after last C dose
C to T	Re-load with T 180 mg irrespective of timing of last dose	Administer T 90 mg bid MD 24 hrs after last C dose
De-escalation in Potency		
P to C	Re-load with C 600 mg 24 hrs after last P dose*	Administer C 75 mg MD 24 hrs after last P dose
T to C	Re-load with C 600 mg 24 hrs after last T dose*	Re-load with C 600 mg 24 hrs after last T dose*
Change Between High Potency		
P to T	Re-load with T 180 mg 24 hrs after last P dose	Administer T 90 mg bid MD 24 after last P dose
T to P	Re-load with P 60 mg 24 hrs after last T dose	Re-load with P 60 mg 24 hrs after last T dose

C = clopidogrel, P = prasugrel, T = ticagrelor, MD = maintenance dose

*Consider de-escalation with C 75 mg MD (24 hours after last P or T dose) in patients with bleeding or bleeding concerns.

PREVENT POTENTIAL ERRORS



- ✓ Educate providers on pharmacodynamic differences between P2Y₁₂ inhibitors and current consensus recommendations for general escalation/de-escalation of these agents.
- ✓ Prior to the initiation or switch of a P2Y₁₂ inhibitor, obtain past medical history to identify contraindications, current medication list to identify drug interactions, pharmacy benefits to ensure drug cost/coverage, timing of index event, and when the patient received or will receive the last dose of the current P2Y₁₂ inhibitor.

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