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Abstract Title: Cangrelor use in patients undergoing percutaneous coronary intervention or neurovascular intervention with stent placement in a community hospital

ABSTRACT PREVIEW

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Edit Cangrelor use in patients undergoing percutaneous coronary intervention or neurovascular intervention with stent placement in a community hospital

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Purpose

Cangrelor is an intravenous P2Y12 antagonist approved by the FDA as an adjunct to percutaneous coronary intervention (PCI) for reducing the risk of periprocedural myocardial infarction, repeat coronary revascularization, and stent thrombosis in patients not treated with an oral P2Y12 inhibitor or glycoprotein IIb/IIIa inhibitor. The novel advantages of cangrelor include its rapid onset and offset. Due to these pharmacokinetic properties, its use has further expanded to bridge therapy for cardiac surgery and in patients requiring neurovascular intervention with anticipated intracranial stent, carotid stent or flow-diverter placement. The purpose of this review is to evaluate the appropriateness of cangrelor use.

Methods

This was a single-center, retrospective observational chart review to examine prescribing trends of patients who received cangrelor at Baptist Hospital of Miami (BHM) from January 2018 to January 2019. Data collection included patient demographics, indication for use, type of procedure performed, ordering physician and specialty, bolus dose, infusion dose and duration, transition to an oral P2Y12 agent, timing of oral P2Y12 administration in relation to the cangrelor administration, hemodynamic status prior to procedure, any co-morbidity precluding the use of an oral P2Y12 agent, incidence of thrombotic or bleeding event, discharge disposition, and 30-day readmission. The primary outcome of the review included compliance with the FDA label for indication and dose as well as appropriate transition to an oral agent. Secondary outcome included compliance with the BHM criteria for non-formulary drug usage including the evident or documented justification for not using a formulary equivalent prior to the procedure, adverse drug reactions, 30-day readmission and mortality.

Results

A total of 28 patients received cangrelor during the specified study period. Of these, 18 patients received it prior to cardiac catheterization (FDA approved use) and 10 patients received it prior to a neurovascular intervention (off-label use). All 18 cardiac patients underwent PCI; 4/18 (22%) patients received ticagrelor loading dose prior to cangrelor administration, thus not meeting the FDA labeled criteria for use. Furthermore, 5/18 (28%) patients were hemodynamically stable and were potential candidates for oral P2Y12 administration prior to PCI. Seventeen out of eighteen patients were transitioned to ticagrelor prior to completion of cangrelor infusion. Of the 10 patients who were given cangrelor for neurointervention, five were admitted with ischemic stroke and the other 5 with aneurysm. Nine patients underwent cerebral angiography with stenting while 1 patient had cerebral angiography with mechanical thrombectomy and angioplasty. Ninety percent (9/10) patients received ticagrelor loading dose prior to cangrelor infusion. Due to incomplete documentation of dose and duration, the researchers were note able to assess accurate bolus, infusion and duration in all patients. In those where documentation was complete, the FDA approved bolus dose of 30 mcg/kg and the infusion dose of 4 mcg/kg/min was utilized for both cardiovascular and neurovascular cases.

Conclusion

Of the total cangrelor use during the study period, (18/28) 64% of the patients received it for a cardiac indication and (10/28) 36% received it for a non-cardiac indication. Ticagrelor loading dose preceded cangrelor administration in 22% of the PCI and 90% of the neurointervention cases. If indicated, patients were appropriately transitioned from an intravenous to oral P2Y12 inhibitor. An opportunity to improve patient selection and dose documentation was identified through this review. Recommendations to revisit the formulary status and to establish the prescribing criteria for cardiovascular as well as neurovascular use is under consideration by the system-wide formulary committees.

Primary Author Affirmation

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Not applicable

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