Presentation Category: Original - Research in Progress

Abstract Title

Evaluation of Cangrelor Dose and Titrations after Neuroendovascular Procedures

Learning Objective

Discuss whether a predictable dose-response relationship exists between PRU values and cangrelor dose titrations.

Abstract

Purpose

Antiplatelet agents, such as oral P2Y12 inhibitors and glycoprotein IIb/IIIa inhibitors, are standards of care for treating neurovascular pathologies status post neuroendovascular procedures. However, the variable onset and offset of these drugs potentially expose patients to an increased risk of hemorrhagic or thrombotic complications. Cangrelor is an intravenous P2Y12 inhibitor that achieves platelet inhibition within two minutes and has an offset time of within one hour from discontinuation. Consequently, there has been an increased interest in the utility of cangrelor following neuroendovascular procedures due to its favorable pharmacokinetic profile. However, an ideal antiplatelet regimen has yet to be established. At the University of Chicago Medicine (UCM), cangrelor is administered as a 15mcg/kg bolus during the neuroendovascular procedure, followed by an infusion starting at 2 mcg/kg/min. Infusions are then titrated at physician discretion to a PRU goal of 50-150. The use of PRU values to dictate cangrelor dose titrations is controversial as there is a dearth of data on whether a predictable dose-response relationship exists between PRU values and cangrelor dose titrations. The purpose of this study is to determine if titrating cangrelor to PRU values can have an impact on improved clinical outcomes or prevention of adverse events.

Methods

A retrospective chart review was performed on patients receiving cangrelor following neuroendovascular intervention at UCM between June 20th, 2022 and August 4th, 2023. Patients' demographic information, past medical history, presence of an ICP monitor, and the neuroendovascular procedure performed while on cangrelor was compiled. Dosing information collected included: bolus amount, initial infusion rate, rate changes, and timing of all dose initiations and changes were recorded to assess adherence or deviation from standard cangrelor dosing procedure at UCM. The timing and value of all PRU assays while actively receiving cangrelor was also documented. Study endpoints include the average dose of cangrelor to achieve 2 therapeutic PRU assays, the average number of dose titrations to attain a PRU value within 50-150, and the percentage change in PRU value with each titration. Safety outcomes include the incidence of major or minor bleeding while receiving cangrelor and the incidence of new ischemic stroke or intracranial device thrombosis while receiving cangrelor. STATA will be utilized to perform all statistical analysis.

Results

A total of 57 treatment courses were analyzed for inclusion in this study. In order to be included, at least 1 cangrelor dose titration had to occur based on a recorded PRU value. Ultimately, 41 entries met criteria for inclusion. Research in Progress.

Conclusions

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