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Evaluation of the appropriateness of tirofiban use in accordance to current ACC/AHA guidelines

Priyam Mithawala, PharmD[1,2] ; Mary George, PharmD[2]
Philadelphia College of Osteopathic Medicine, School of Pharmacy[1] ; Gwinnett Medical Center[2]

Introduction

- Tirofiban is a tyrosine-derived non-peptide Glycoprotein IIb/IIIa (GP2b3a) inhibitor .
- GP2b3a inhibitor therapy during primary percutaneous coronary intervention (PCI) decreases the incidence of major adverse events as it directly affects the level of platelet inhibition.
- Currently tirofiban is approved for high-dose IV bolus (HDB) regimen of 25mcg/kg within 5 minutes and then 0.15mcg/kg/min infusion for up to *18 hours* in patients with Non-ST-Elevation Myocardial Infarction(NSTEMI) and Unstable Angina(UA) undergoing Percutaneous Intervention(PCI).

Purpose

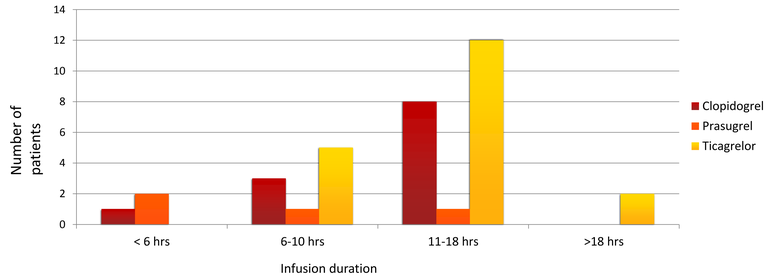
- Primary objective: To assess the appropriateness of tirofiban utilizing the 2014 AHA/ACC guideline recommendations.
- Secondary objectives:
  - To identify the indication for tirofiban use
  - Duration of infusion post-PCI
  - Other antiplatelet used in conjunction
  - Assess complications such as bleeding or thrombocytopenia.

Methods and Materials

- Data was collected through retrospective chart review utilizing computerized physician order entry (CPOE) and medical records.
- Patients were randomly selected from period of January 2015 to July 2015 who received tirofiban infusion.
- Data collection included significant medical history, indication for tirofiban use, laboratory values (troponin, platelets, renal function), tirofiban infusion duration, anti-platelets used concurrently and complications (i.e. bleeding and thrombocytopenia) post tirofiban infusion.

Results

Figure 1. Comparison of Tirofiban infusion duration on different anti-platelet agents



**Antiplatelet agents are given with Aspirin 325 mg*
**All tirofiban doses are renally adjusted and given along with tirofiban bolus dose*

Figure 2. Comparison of Tirofiban use Indications

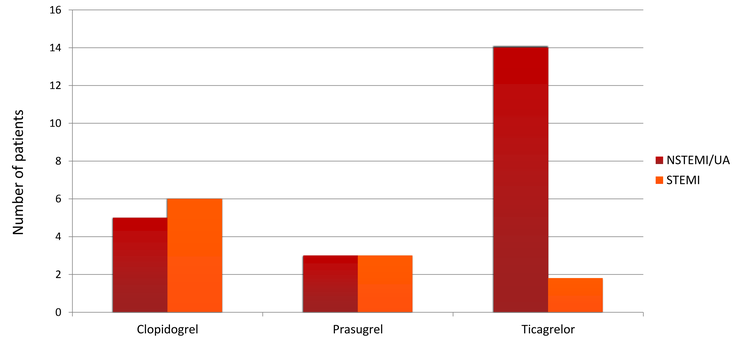
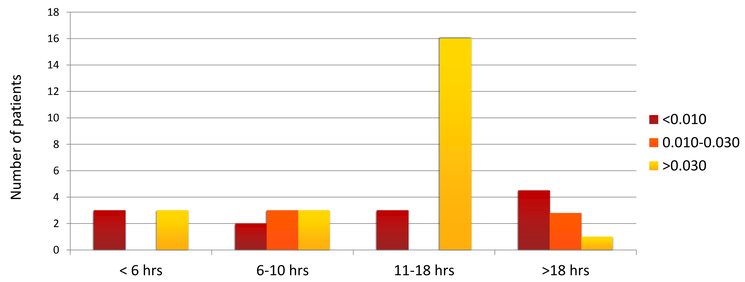


Figure 3. Comparison of Measured Troponin-T and Duration of Tirofiban Infusion



Indication for Tirofiban Use

Demographics
N=35

- A total of 6 patients (17.1%) were UA, 16 (45.7%) were NSTEMI, and 13 (37.2%) were STEMI.
- All patients (N=35) were loaded with dual anti-platelet agents when given tirofiban infusion.
- Each tirofiban infusion was given with HDB regimen and was renally adjusted when appropriate.
- All patients had appropriate indications for tirofiban use, but the duration of use varied.
- A total of 3 patients (8.6%) received infusion longer than 18 hours and 14 (40%) patients received ≥ 11 hours of tirofiban infusion.
- All patients who received > 18 hours infusion were not candidates of coronary artery bypass grafting.
- There was no evidence of thrombocytopenia (i.e. 50% drop in platelets than baseline or platelets < 100,000/mm3) or bleeding (i.e. signs of bleeding or administration of reversal agent) complications post tirofiban infusion.

Conclusions

- Based on these results, standardization of tirofiban infusion protocol will help with consistency in current practice.
- FABOLUS PRO trial has shown that tirofiban given as bolus only or bolus followed by 2-hour infusion along with clopidogrel or prasugrel leads to higher degree of platelet inhibition and obviates the need of longer infusion in patients with STEMI.
- Studies further investigating similar strategies can help standardize use and infusion duration to improve cost-effectiveness without compromising quality of care.

Disclosure

Authors of this presentation have following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:

- Priyam Mithawala, priyammi@pcom.edu: Nothing to disclose
- Mary George, mgeorge@gwinnettmedicalcenter.org: Nothing To disclose

References

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