Cangrelor: A Retrospective Analysis of Usage in a Community Teaching Hospital

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Introduction

- Cangrelor is an intravenous $P2Y_{12}$ inhibitor indicated as an adjunct to percutaneous coronary intervention (PCI)
- New guidance was developed in April 2020 with interventional cardiology (IC) to include perioperative bridging for patients with all of the following:
  - Recent stent or stent thrombosis in absence of dual antiplatelet therapy, inability to receive enteral medications, contraindication to eptifibatide
- The purpose is to assess adherence to the revised utilization criteria

Methodology

- A retrospective chart review was conducted in patients ≥ 18 years of age who received cangrelor between May 2020 and August 2021
- Primary objectives included percent of orders that received IC approval and the rate of usage for approved indications at an appropriate dose
- Secondary objectives were incidence of bleeding following cangrelor use, 30-day incidence of stent thrombosis, and 30-day mortality
- Bleeding following cangrelor use was categorized using the Thrombolysis in Myocardial Infarction (TIMI) criteria
- Objectives were analyzed using descriptive statistics

Results

Table 1. Baseline Demographics (n=24)[1]

Age, median years (IQR)	69 (24)
Male gender	15 (63)
Comorbidities	
Hypertension	22 (92)
Hyperlipidemia	15 (63)
Diabetes Mellitus	10 (42)
Coronary Artery Disease	7 (29)
History stent thrombosis	3 (13)
History of major bleed	2 (8)
Reason for bridging (n=11)	
Bridge to CABG	5 (45)
Bridge while NPO	5 (45)
Bridge for surgical work-up	1 (9)
Duration of infusion, average hours (SD)[2]	
PCI only (n=11)	2.5 (2)
Bridging only (n=5)	16.3 (12.4)
PCI then bridge (n=6)	10.7 (7.2)

[1] All demographics reported as n (%) unless otherwise stated
[2] 2 patients were excluded due to unclear documentation of infusion end time

- Cangrelor was approved for appropriate indications **83%** of the time
- Dosing discrepancies occurred during bridging but **did not** lead to bleeding
- Non-CABG related bleeds occurred in 25% of patients, with **no major bleeds**

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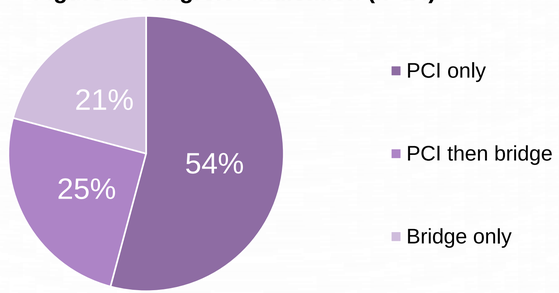
Figure 1. Cangrelor indication (n=24)



Results

Figure 2. Bridging Doses Administered (n=11)

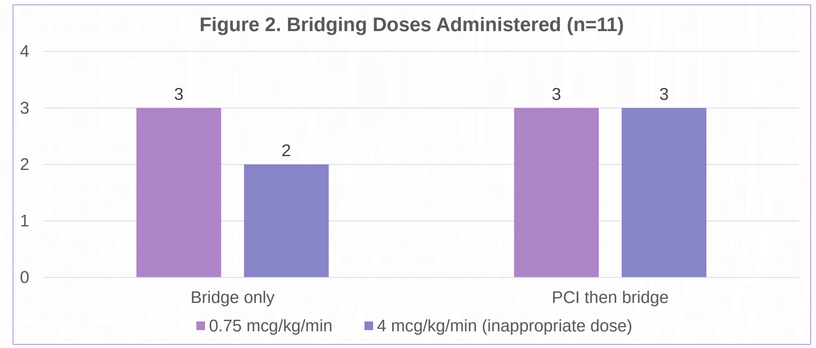


Table 2. Primary Objectives (n=24)

Interventional cardiology approval, n (%)	23 (96)
Approved indication, n (%)	20 (83)
Appropriate dose for indication, n (%)[3]	17 (71)
PCI only (n=13)	11 (85)
Bridging only (n=5)	3 (60)
PCI then bridge (n=6)	3 (50)

[3] PCI: 30 mcg/kg bolus, 4 mcg/kg/min up to 4 hours
Bridging: no bolus, 0.75 mcg/kg/min
PCI then bridge: 30 mcg/kg bolus, 4 mcg/kg/min up to 4 hours during PCI, then 0.75 mcg/kg/min

Table 3. Secondary Objectives (n=24)

Bleed within 24 hours after cangrelor, n (%)[4]	6 (25)
Non-CABG related bleeding: Minor	2 (8)
Non-CABG related bleeding: Requiring medical attention	4 (17)
30-day stent thrombosis, n (%)	0 (0)
30-day mortality, n (%)	9 (38)

[4] No bleeding occurred in patients who were bridged with doses other than 0.75 mcg/kg/min

Discussion

- Dosing discrepancies occurred, indicating a need for guidance on appropriate indication-specific dosing
- No CABG-related bleeding occurred in those who were bridged to CABG
- There were no incidences of stent thrombosis, but there was a 38% mortality rate within 30 days of the event
- Limitations of this study include the small sample size and that it was conducted at a single center
- The retrospective nature of this chart review was also a limitation as there were found to be inconsistencies in documentation