TREATMENT OF HIT: DO DOACS HAVE A PLACE IN THERAPY?

Sarah Fry, Pharm.D.
PGY1 Pharmacy Practice Resident
Central Texas Veterans Health Care System - Temple, Texas
OBJECTIVES

1. Define heparin induced thrombocytopenia (HIT) and review incidence and risk factors
2. Describe currently approved treatment options for HIT
3. Discuss direct oral anticoagulants (DOACs) and their respective mechanisms of action
4. Examine recent literature regarding the use of DOACs in the treatment of HIT
DEFINE HEPARIN INDUCED THROMBOCYTOPENIA AND REVIEW INCIDENCE AND RISK FACTORS
HEPARIN-INDUCED THROMBOCYTOPENIA

**TYPE I HIT**
- Nonimmune mediated
- Caused by direct interaction with heparin and platelets
- Incidence: ≤ 10% of patients treated with heparin
- Onset: within 72 hrs
- Self-limiting

**TYPE II HIT**
- Immune mediated
- Caused by platelet, endothelial, and monocyte-activating antibodies
- Incidence: 0.2-5% of patients treated with heparin
- Onset: day 5-10 of therapy*
- Potentially lethal

PATHOPHYSIOLOGY OF HIT

Heparin & PF4 form immunogenic complexes, resulting in Ab formation

PF4-heparin complex binds to IgG antibodies produced

PF4-heparin-Ab complex bind with Fc receptors on platelet

Platelet activation causes PF4 release, endothelial injury, & thrombocytopenia

RISK FACTORS

- **Heparin source**
  - Bovine > porcine

- **Heparin type**
  - Unfractionated heparin (UFH) > Low molecular weight heparin (LMWH)

- **Volume of heparin dose**
  - Therapeutic dose > prophylactic dose > flush/heparin-coated device

- **Timing between exposure and platelet drop**
  - First exposure: Platelet fall 5-10 days after initiation
  - Previous exposure (within 90 days): Platelet fall within 1 day of initiation

- **Patient gender**
  - Female > male

RISK FACTORS

Heparin source
- Bovine
- Porcine

Heparin type
- Unfractionated heparin (UFH)
- Low molecular weight heparin (LMWH)

Volume of heparin dose

Timing between exposure and platelet drop
- First exposure: Platelet fall 5-10 days after initiation
- Previous exposure (within 90 days): Platelet fall within 1 day of initiation

Patient gender
- Female > male

Clinical criteria

- Thrombocytopenia
- Exclusion of other causes of thrombocytopenia
- Resolution of thrombocytopenia after heparin discontinuation

Laboratory confirmation

- Immunoassays (ELISA)
- Functional tests (Serotonin release assay [SRA])
<table>
<thead>
<tr>
<th>Category</th>
<th>2 points</th>
<th>1 point</th>
<th>0 points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thrombocytopenia</td>
<td>&gt; 50% fall OR nadir ≥ 20x10⁹/L</td>
<td>30-50% fall OR nadir 10-19x10⁹/L</td>
<td>&lt; 30% fall OR nadir &lt;10x10⁹/L</td>
</tr>
<tr>
<td>Timing in platelet decrease</td>
<td>Days 5-10 OR on or prior to day 1 with recent heparin exposure (within 30 days)</td>
<td>&gt; day 10 or timing unclear or &lt; day 1 if previous heparin exposure &gt;30-100 days</td>
<td>&lt; day 4 (no recent exposure)</td>
</tr>
<tr>
<td>Thrombosis/other sequelae</td>
<td>Proven thrombosis, skin necrosis, or acute systemic reaction after heparin bolus</td>
<td>Progressive, recurrent, or silent thrombosis; erythematous skin lesions</td>
<td>None</td>
</tr>
<tr>
<td>Other causes of thrombocytopenia</td>
<td>None evident</td>
<td>Possible</td>
<td>Definite</td>
</tr>
</tbody>
</table>

Interpretation of total score:
6-8 = high probability of HIT
4-6 = moderate risk of HIT
< 4 = low risk of HIT

CLINICAL MANAGEMENT

• Immediately discontinue all sources of heparin exposure if:
  • “High” or “intermediate” 4T risk score
  • HIT is clinically suspected
• Begin therapeutic anticoagulation with non-heparin anticoagulant
DESCRIBE CURRENTLY APPROVED TREATMENT OPTIONS FOR HIT
NON-HEPARIN ANTICOAGULANTS

Direct thrombin inhibitors
- Argatroban*
- Bivalirudin
- Lepirudin* and desirudin

Indirect factor Xa inhibitors
- Danaparoid*
- Fondaparinux
PARENTERAL DIRECT THROMBIN INHIBITORS

Argatroban
Bivalirudin
ARGATROBAN

Direct thrombin inhibitor

- Initial dosing: 2 mcg/kg/min continuous IV infusion (CIVI)
  - No adjustment for renal impairment but lower doses necessary in hepatic impairment
- Maintenance dosing: based on aPTT measured 2 hours after initiation
  - Adjust to aPTT 1.5-3 times baseline NTE 100 sec
  - Dosage should not exceed 10 mcg/kg/min
- Conversion to oral anticoagulant
  - Argatroban increases INR
  - CHEST recommends overlap of 5 days or factor X assay
LEPIRUDIN

Direct thrombin inhibitor

- Weight-based initial and maintenance dosing:
  - \( \leq 110 \text{ kg} \) – 0.4 mg/kg slow IV bolus, then 0.15 mg/kg/hr CIVI
  - >110 kg – 44 mg slow IV injection, then 16.5 mg/hr CIVI
- Renal impairment: reduce loading and maintenance doses if \( \text{CrCl} < 60 \text{ mL/min} \) or \( \text{SCr} > 1.5 \text{ mg/dL} \)
  - Initial: 0.2 mg/kg slow IV injection
  - Maintenance: see manufacturer recommendations
- Hepatic impairment: no adjustments necessary

- Monitoring
  - aPTT goal 1.5-2.5 times baseline
  - Check 4 hours after initiation and/or following change in infusion rate and at least once daily

- Conversion to oral anticoagulant
  - Adjust dose to achieve aPTT just above 1.5, then initiate warfarin with minimum of 4-5 day overlap
  - Can affect INR but less effect than argatroban
WHY NOT WARFARIN?

- Vitamin K antagonists (VKA) are NOT recommended for use in patients with HIT until platelets have substantially recovered (Grade 1C)
- If VKA therapy has been initiated when HIT is diagnosed, vitamin K should be administered (Grade 2C)
- Protein C levels fall faster than prothrombin levels \( \rightarrow \) pro-thrombotic state
  - Warfarin-induced skin necrosis
  - Venous limb gangrene

<table>
<thead>
<tr>
<th>Protein</th>
<th>Half-life</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Procoagulant effects</td>
</tr>
<tr>
<td>VII</td>
<td>4-6 hrs</td>
</tr>
<tr>
<td>IX</td>
<td>21-30 hrs</td>
</tr>
<tr>
<td>X</td>
<td>27-48 hrs</td>
</tr>
<tr>
<td>II</td>
<td>41-72 hrs</td>
</tr>
<tr>
<td></td>
<td>Anticoagulant effects</td>
</tr>
<tr>
<td>S</td>
<td>60 hrs</td>
</tr>
<tr>
<td>C</td>
<td>9 hrs</td>
</tr>
</tbody>
</table>

Chest. 2012 Feb;141(2 Suppl):e495S-e530S
DISCUSS DOACS AND THEIR RESPECTIVE MECHANISMS OF ACTION
THROMBIN INHIBITOR

Dabigatran (Pradaxa)
THROMBIN INHIBITOR

Dabigatran (Pradaxa)
DABIGATRAN

Stroke risk reduction in atrial fibrillation
• 150 mg BID

Treatment of DVT or PE
• 150 mg BID
• Must have 5-10 days of initial parenteral anticoagulant therapy

Prophylaxis of DVT and PE following hip replacement
• 110 mg day 1, then 220 mg once daily
**DIRECT XA INHIBITORS**

Rivaroxaban (Xarelto)
Apixaban (Eliquis)
Edoxaban (Savaysa)
DIRECT XA INHIBITORS

Rivaroxaban (Xarelto)
Apixaban (Eliquis)
Edoxaban (Savaysa)
RIVAROXABAN

Stroke risk reduction in atrial fibrillation
• 20 mg once daily with evening meal

Treatment of DVT or PE
• 15 mg BID with food x 21 days, then 20 mg once daily with food
• Can transition to 10 mg once daily with or without food after at least 6 months to reduce risk of recurrence

Prophylaxis of DVT and PE following hip or knee replacement
• 10 mg once daily with or without food x 35 days (hip) or x 12 days (knee)
APIXABAN

Stroke risk reduction in atrial fibrillation
• 5 mg BID

Treatment of DVT or PE
• 10 mg BID x 7 days, then 5 mg BID
• Can transition to 2.5 mg BID after at least 6 months to reduce risk of recurrence

Prophylaxis of DVT and PE following hip or knee replacement
• 2.5 mg BID x 35 days (hip) or x 12 days (knee)
EDOXABAN

Stroke risk reduction in atrial fibrillation
• 60 mg once daily

Treatment of DVT or PE
• 60 mg once daily
• Must have 5-10 days of initial parenteral anticoagulant therapy
EXAMINE RECENT LITERATURE REGARDING THE USE OF DOACS IN THE TREATMENT OF HIT
RIVAROXABAN FOR TREATMENT OF SUSPECTED OR CONFIRMED HEPARIN-INDUCED THROMBOCYTOPENIA STUDY

LINKINS, LA ET AL
### Objective

- To evaluate the efficacy and safety of rivaroxaban in patients with heparin-induced thrombocytopenia

### Methodology

- Multicenter, single-arm, prospective cohort study of Canadian patients

### Outcome

- Primary: Incidence of new symptomatic, objectively-confirmed venous and arterial thromboembolism in the combined cohort of patients (confirmed or suspected HIT) at 30 days
- Secondary: Incidence of symptomatic thromboembolism while on treatment with rivaroxaban, and (in SRA+ pts only) incidence of venous and arterial thromboembolism, incidence of major bleeding, and time to platelet recovery while on rivaroxaban
Inclusion criteria

• 4T score ≥4

Exclusion criteria

• Pregnant or nursing
• Mechanical heart valve
• Severe renal insufficiency (CrCl < 30 mL/min)
• Hepatic disease (Child-Pugh B and C)
• Clinically significant active bleeding or lesions at increased risk of bleeding within last 6 mos
• Ongoing treatment with CYP3A4 or PGP inhibitor or inducer
• Long-term indwelling epidural catheter
RIVAROXABAN FOR HIT STUDY, CONT

Patient population

- Average age: 73.6 yrs (55-87)
- 6 received fondaparinux and 1 received danaparoid prior to study enrollment and rivaroxaban initiation

N=22

HIT negative: 10

HIT positive: 12 (7M, 5F)

HITT at study entry: 6

HIT negative:

HIT positive:
RIVAROXABAN FOR HIT STUDY, CONT

4T score indicated mod/high risk of HIT

- Rivaroxaban 15 mg BID initiated
- Local HIT assay ordered for confirmation

Local HIT assay results returned

- **Positive result:** continue rivaroxaban 15 mg BID until PLT recovery (or until day 21 if HITT at study entry) then rivaroxaban 20 mg daily until day 30
- **Negative result:** study drug discontinued, tele follow up

RIVAROXABAN FOR HIT STUDY, CONT

Results

- Combined cohort of 22 patients had 371 days of exposure to rivaroxaban
- No HIT-positive patients developed a major bleed
- All patients with thrombocytopenia who completed treatment achieved platelet recovery

<table>
<thead>
<tr>
<th>Outcome</th>
<th>N</th>
<th>Percent (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>New symptomatic thromboembolism</td>
<td>0</td>
<td>---</td>
</tr>
<tr>
<td>Symptomatic thromboembolism</td>
<td>1*</td>
<td>4.5% (0, 23.5%)</td>
</tr>
<tr>
<td>Arterial and venous thromboembolism (SRA+)</td>
<td>1#</td>
<td></td>
</tr>
<tr>
<td>Major bleeding (SRA+)</td>
<td>1^</td>
<td></td>
</tr>
<tr>
<td>Time to PLT recovery (SRA+)</td>
<td>11 days</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deaths</td>
<td>4</td>
<td></td>
</tr>
</tbody>
</table>

* Apheresis catheter clot; # acute-on-chronic clots; ^ gastric tumor, riva held x 9d
• 35-50% of HIT+ patients that do NOT receive alternative anticoagulation will develop new/recurrent clot within 30 days
• Currently approved agents reduce this risk ~55-68%

• Thrombotic event rate was 4.5%
• Few poor outcomes, none of which were directly attributable to study medication
### Strengths
- Met power despite early termination
- Only prospective evaluation of DOAC in HIT/HITT patients to date
- Central confirmation of HIT diagnosis

### Weaknesses
- Small sample size
- Trial prematurely terminated
- Varied exposure to parenteral anticoagulants prior to initiation of rivaroxaban
RIVAROXABAN FOR HEPARIN-INDUCED THROMBOCYTOPENIA: ADDING TO THE EVIDENCE

ONG, SY ET AL
RIVAROXABAN FOR HEPARIN-INDUCED THROMBOCYTOPENIA: ADDING TO THE EVIDENCE

Objective

- Evaluation of rivaroxaban use WITHOUT preceding fondaparinux or argatroban use in patients diagnosed with HIT

Methodology

- Retrospective case series review at 2 Singapore hospitals

Outcome

- Platelet recovery without development of progressive/new thrombosis
Inclusion criteria

• 4T score ≥4
• Positive IgG-specific anti-PF4/heparin complex assay

Exclusion criteria

• Treatment with fondaparinux or argatroban prior to rivaroxaban
Patient population

- 4 M, 5 F
- Average age: 51.5 years (38-68)
- Average day rivaroxaban started: 11.7 (5-19)
RIVAROXABAN: ADDING TO EVIDENCE, CONT

HIT positive

CrCl < 15 mL/min (N=5)
Rivaroxaban 10 mg once daily, anti-Xa monitoring

CrCl ≥ 15 mL/min (N=4)
Rivaroxaban 15 mg BID x 21 days, then 20 mg once daily
**Results**

- All patients showed platelet recovery
- Six patients successfully transitioned to warfarin following platelet recovery

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean duration to platelet recovery of 150 x 10⁹/L</td>
<td>14 days (5-41 days)</td>
</tr>
<tr>
<td>New or progressive thrombus development</td>
<td>0 patients</td>
</tr>
<tr>
<td>Limb amputation due to necrosis</td>
<td>0 patients</td>
</tr>
<tr>
<td>Bleeding adverse events</td>
<td>0</td>
</tr>
</tbody>
</table>

Ann Hematol (2017) 96:525-527
Conclusions

- Attractive option due to:
  - Oral administration
  - No need to monitor in normal renal function
  - No need to transition to warfarin
**RIVAROXABAN: ADDING TO EVIDENCE, CONT**

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• No other anticoagulant used prior to rivaroxaban after heparin product stopped</td>
<td></td>
</tr>
<tr>
<td>• All patients had HITT</td>
<td>• HIT not confirmed by functional assay</td>
</tr>
<tr>
<td>• Demonstrated safe use for HIT treatment in renal impairment</td>
<td></td>
</tr>
</tbody>
</table>
DIRECT ACTING ORAL ANTICOAGULANTS FOR THE TREATMENT OF SUSPECTED HEPARIN-INDUCED THROMBOCYTOPENIA

DAVIS K, DAVIS D
DIRECT ACTING ORAL ANTICOAGULANTS FOR THE TREATMENT OF SUSPECTED HEPARIN-INDUCED THROMBOCYTOPENIA

Objective

• To evaluate the efficacy and safety of direct oral anticoagulant (DOAC) therapy in hospitalized patients with suspected heparin-induced thrombocytopenia (HIT)

Methodology

• Retrospective cohort study of adult patients prescribed DOAC for HIT therapy January 1, 2013, through January 1, 2017

Outcome

• Primary: Composite of newly diagnosed venous or arterial thromboembolism, gangrene, or amputation due to critical limb ischemia during hospitalization
• Secondary: In-hospital major bleeding, 30 day mortality, time to platelet recovery
DOACS FOR SUSPECTED HIT, CONT

Inclusion criteria

• 4T score ≥4
• Positive IgG-specific anti-PF4/heparin complex assay
• Treatment with apixaban, dabigatran, or rivaroxaban

Exclusion criteria

• Negative serotonin release assay
• Previous history of HIT
• Admission for fewer than 48 hours
DOACS FOR SUSPECTED HIT, CONT

Patient population
- Average age: 66.5 years
- 6 M, 6 F
- Heparin indications:
  - VTE prophylaxis: 5
  - VTE: 3
  - Atrial fibrillation: 2
  - Dialysis line: 2

26 patients identified
- 14 excluded due to -SRA
- 12 included for analysis

HITT: 5
Initial argatroban therapy: 7

### DOACS FOR SUSPECTED HIT, CONT

**Results**

- Apixaban: N=9
  - 5 mg BID: 7
  - 10 mg BID: 1
  - 2.5 mg BID: 1
- Rivaroxaban: N=3
  - 15 mg BID
- Average length of therapy: 9.33 days
- Continued DOAC therapy: 11

### Results Table

<table>
<thead>
<tr>
<th>Outcome</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary</td>
<td></td>
</tr>
<tr>
<td>HIT-related thrombosis, gangrene, or amputation</td>
<td>0</td>
</tr>
<tr>
<td>Secondary</td>
<td></td>
</tr>
<tr>
<td>Major bleeding</td>
<td>0</td>
</tr>
<tr>
<td>Time to PLT recovery</td>
<td>7.42 days (3-14)</td>
</tr>
</tbody>
</table>
DOACS FOR SUSPECTED HIT, CONT

**Strengths**

- Largest apixaban cohort to be evaluated to date

**Weaknesses**

- Low enrollment
- Confirmatory SRA testing not performed on all patients
- Outcomes only assessed during period of hospitalization

NEW ORAL ANTICOAGULANTS IN THE TREATMENT OF HEPARIN-INDUCED THROMBOCYTOPENIA

SHARIFI, M ET AL
## Objective

• Explore the outcome of patients with HIT treated with a combination of argatroban and NOAC

## Methodology

• Retrospective cohort review of patients treated September 2011–June 2013
• Identified patients were followed in a prospective manner

## Outcomes

• Fluctuations in platelet count
• Thrombotic outcomes
• Mortality
NOACS IN HIT, CONT

Inclusion criteria

• Diagnosis of HIT

Exclusion criteria

• None identified
N=22

UFH: 6
Enoxaparin: 12
Combo: 4

Patient population

- Average age 72±8 years
- 15 M, 7 F
- Initial argatroban therapy prior to NOAC transition
  - Mean duration of argatroban infusion: 32±4 hrs
### NOACS IN HIT, CONT

<table>
<thead>
<tr>
<th>Suspicion of HIT: Discontinuation of all heparin products</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Initiation of parenteral argatroban</td>
<td>0.3-0.5 mcg/kg/min initial infusion with no bolus</td>
</tr>
</tbody>
</table>

**Conversion to NOAC 2 hours after discontinuation of argatroban**

| Dabigatran 150 mg BID: 6 patients | Rivaroxaban 20 mg daily: 11 patients | Apixaban 5 mg BID: 5 patients |

**Assessed for outcomes: mortality, VTE, arterial thrombosis, limb loss, bleeding**

| NOAC therapy minimum of 3 months, most extended to 6 months | Mean follow up: 19±3 months |

*Thrombosis Research 135 (2015) 607-609*
**Results**

- Serologic confirmation of HIT in 20 pts
- At 6 months, 18 patients remained on NOAC
- Indefinite anticoagulation recommended in 10 patients

<table>
<thead>
<tr>
<th>Outcome</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Thrombotic outcomes</strong></td>
<td></td>
</tr>
<tr>
<td>- Lower extremity DVT: new onset</td>
<td>4</td>
</tr>
<tr>
<td>- Upper extremity DVT: new onset</td>
<td>1</td>
</tr>
<tr>
<td>- Superficial thrombosis formation</td>
<td>2</td>
</tr>
<tr>
<td>- Arterial thrombosis</td>
<td>0</td>
</tr>
<tr>
<td><strong>Mortality outcomes</strong></td>
<td></td>
</tr>
<tr>
<td>- Hospital deaths</td>
<td>0</td>
</tr>
<tr>
<td>- Mortality within 30 days of discharge</td>
<td>3</td>
</tr>
<tr>
<td>- Mortality at 19 months</td>
<td>3</td>
</tr>
<tr>
<td><strong>Other outcomes</strong></td>
<td></td>
</tr>
<tr>
<td>- Bleeding</td>
<td>0</td>
</tr>
<tr>
<td>- Limb loss</td>
<td>0</td>
</tr>
<tr>
<td>- Recurrent DVT</td>
<td>0</td>
</tr>
</tbody>
</table>
Conclusions

• A “short course” of argatroban followed by a NOAC is safe and effective treatment for HIT
• No bleeding, recurrent VTE or arterial thrombosis observed during follow up period
## NOACS IN HIT, CONT

<table>
<thead>
<tr>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “Real world” patient population</td>
<td>• Open label, single arm study</td>
</tr>
<tr>
<td>• Included all available NOAC medications approved during study period</td>
<td>• Retrospective study with small population</td>
</tr>
<tr>
<td></td>
<td>• Rivaroxaban and apixaban doses lower than initial DVT treatment dose</td>
</tr>
<tr>
<td></td>
<td>• No arterial thrombosis at presentation</td>
</tr>
</tbody>
</table>

Thrombosis Research 135 (2015) 607-609
PRESENTER’S CONCLUSIONS
# LITERATURE SUMMARY

<table>
<thead>
<tr>
<th>Study</th>
<th>Design</th>
<th>NOAC</th>
<th>N</th>
<th>DTI?</th>
<th>Outcomes</th>
<th>Results</th>
</tr>
</thead>
</table>
| Linkins et al 2016| Single arm prospective cohort   | Rivaroxaban 15 mg BID         | 22 | +/-  | 1º: Incidence of new symptomatic VTE or arterial thrombosis at 30 days  
2º: incidence of thromboembolism while on rivaroxaban; in SRA+ pts – venous/arterial thromboembolism, major bleeding, time to platelet recovery | Early termination  
1º: 1 patient (4.5%, 0-23.5%)  
2º: 1 episode major bleeding, 1 BKA, 90% achieved plt recovery (mean of 11 days)                                                                                                                   |
| Ong et al 2017    | Retrospective case series        | Rivaroxaban 10 mg once daily or 15 mg BID | 9  | No   | Platelet recovery without development of progressive/new thrombosis                                                                                                                                  | 100% achieved plt recovery (mean of 14 days)  
No new/progressive thrombus                                                                                                                                                                                                                      |
| Davis & Davis 2017| Retrospective cohort study      | Rivaroxaban 15 mg BID Apixaban | 12 | ?    | 1º: Composite of newly diagnosed venous/arterial thrombosis, gangrene, limb amputation  
2º: In-hospital bleeding, time to plt recovery                                                                                                                                               | 1º: No thrombotic events  
2º: 100% achieved plt recovery (mean of 7.42 days), 0 episodes of major bleeding                                                                                                                                  |
| Sharifi et al 2015| Retrospective cohort study      | Dabigatran 150 mg BID Rivaroxaban 20 mg daily Apixaban 5 mg BID | 22 | Yes  | Mortality, VTE, arterial thrombosis, limb loss, bleeding                                                                                                                                             | Thrombosis: 5 DVT, 2 superficial, 0 arterial  
Mortality: 0 in-hospital, 6 deaths at 19 mos (0 thrombus-related) 0 bleeding events                                                                                                                                                    |
ADVANTAGES OF DOACS OVER TRADITIONAL THERAPY

Rapid onset of oral medication

• No need for "bridge" with argatroban if using rivaroxaban or apixaban
• No need for IV infusion therapy

Standard dosing for currently-approved indications

• Minimal need for laboratory monitoring in majority of patient population

No need to transition to warfarin upon platelet recovery

• Can continue DOAC therapy for recommended anticoagulation treatment period

Tran PN, Tran MH. Clin Appl Thromb Hemost. 2017;1076029617696582.
PLACE IN THERAPY

- Unlikely to see rigorous clinical trials due to rarity of diagnosis and time required to confirm objectively

- Cohort studies and case reports indicate that outcomes are similar to those in the ARG-911 trial that led to approval of argatroban for HIT

- Likely will see more widespread use of DOAC medications in the future thanks to their ease of use and convenience of anticoagulation maintenance throughout treatment period

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PGY1 Pharmacy Practice Resident
Central Texas Veterans Health Care System - Temple, Texas