PatientOrderSets

Thrombosis Canada / Thrombose Canada

PATIENT INFORMATION

Anticoagulant-related Bleeding Management Order Set

ACTION

TC This icon represents guidance recommended by Thrombosis Canada

Triage

Priority: Determine Bleeding Acuity: Minor, Moderate or Severe Bleeding

Check one of the Following Levels of Bleeding Acuity (check the box) TC

☐ **Severe/ Life-threatening Bleeding**

- Intracranial hemorrhage or critical site bleed e.g. retroperitoneal, intra-spinal, intra-ocular, intra-articular
- Actual or impending hemodynamic compromise e.g. massive gastrointestinal bleed
- Clinically overt bleeding and either a decrease in Hgb level of 20 g/L or more, or administration of 2 or more units RBCs

☐ **Moderate Bleeding**

- Hemodynamically stable e.g. gastrointestinal bleeding, epistaxis

☐ **Minor Bleeding**

- Minor bleeding e.g. subconjunctival hemorrhage, dental bleeding, hemorrhoidal bleeding

Initial Management

Priority: Stabilize Patient

Resuscitation

☒ Initiate resuscitation measures, as clinically appropriate, e.g. isotonic fluids intravenously TC

☐ Local hemostatic measures, as dictated by site of bleeding, e.g. compression to bleeding site

Patient Management

☐ Insert IV

☐ Evaluate for transfusion therapy. For transfusion parameters refer to Transfusion Therapy Recommendations TC

☐ Administer _____ unit(s) _____ (type of blood product)

☐ NPO

☐ Monitor client as clinically appropriate, as per policy/procedure

☐ Provide O_2 and titrate according to policies/procedures/medical directives

☐ Consult/refer for: ☐ Procedural/Surgical intervention: _____

Anticoagulant Screen (check the box to indicate which agent patient is currently taking) TC

☐ Apixaban ☐ Rivaroxaban ☐ Unknown anticoagulant

☐ Dabigatran ☐ Warfarin ☐ _____

Labs (baseline labs, required for all patients)

☒ CBC, **STAT** TC ☒ APTT, **STAT** TC ☒ INR, **STAT** TC ☐ Group+Screen

☒ Creatinine ☐ _____

Drug Specific Levels (where available) TC

Patient on Apixaban: ☐ Apixaban-calibrated anti-Xa activity assay (anti-Xa levels)

Patient on Dabigatran: ☐ Dilute thrombin time (e.g. Hemoclot Test®)

☐ Other Dabigatran level: _____ (e.g. ecarin clotting time)

Patient on Rivaroxaban: ☐ Rivaroxaban-calibrated anti-Xa activity assay (anti-Xa levels)

For information on test Interpretation for Novel Anticoagulants (NOACs) Novel Anticoagulant Test Interpretation Tables TC

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Priority: Stabilize Patient Continued…

Monitoring TC

- ☐ Baseline vital signs; repeat as clinically indicated
- ☐ Continuous Cardiac and SpO_2 monitoring

Patient Information TC

- ☐ Age: _____ years
- ☐ Sex: ☐ Male ☐ Female
- ☐ Weight: _____ kg
- ☐ Serum Creatinine: _____

Severe/Life-threatening Bleeding

Priority: Interrupt Anticoagulant Therapy

Priority: Supportive Management

Transfusion therapy TC

For transfusion parameters refer to Transfusion Therapy Recommendations TC

Target Hemoglobin in active bleeding: greater than or equal to 70 g/L

- ☐ Group+Screen + Crossmatch for _____ unit(s) red blood cells (RBCs)

Target Platelet Count in active bleeding: greater than or equal to 50 x 10^9/L OR greater than or equal to 100 x 10^9/L for intracranial hemorrhage

- ☐ Group+Screen + Crossmatch for _____ unit(s) platelets

Labs

Refer to Initial Management Section on Page 1 of Anticoagulant-related Bleeding Management Order Set

- ☐ Ensure baseline labs drawn TC
- ☐ Other labs: _____

Warfarin Reversal for Severe/Life-threatening Bleeding

1. INR and Weight Known TC

Vitamin K

- ☐ Vitamin K 5 mg in 50 mL normal saline IV **STAT** if INR 1.6 – 5.0
- ☐ Vitamin K 10 mg in 50 mL normal saline IV **STAT** if INR > 5.0 or ongoing major bleeding

Prothrombin Complex Concentrate (PCC) TC

Prothrombin Complex Concentrate (PCC) should not be administered if patient known as HIT positive

For dosing considerations, refer to Prothrombin Complex Concentrate (PCC) Dosing Table TC (table on page 3)

- ☐ PCC _____ units IV **STAT** (PCC product as supplied by Blood Bank)
  - ☒ Administer PCC as per policy/procedure
  - ☒ Repeat INR 15 minutes after PCC infusion completed TC

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Prothrombin Complex Concentrate (PCC) Dosing Table

	INR 1.6-1.9	INR 2.0-2.9	INR 3.0-5.0	INR > 5.0
Weight less than 100 kg	500 units	1,000 units	2,000 units	3,000 units (maximum)
Weight more than 100 kg	1,000 units	1,500 units	2,500 units	3,000 units (maximum)

2. INR Pending, or Weight Unknown, and Cannot Delay Reversal TC

Vitamin K

☐ Vitamin K 10 mg in 50 mL of normal saline IV **STAT**

Prothrombin Complex Concentrate (PCC) TC

Prothrombin Complex Concentrate (PCC) should not be administered if patient known as HIT positive

☐ PCC 2,000 units IV **STAT** (PCC product as supplied by Blood Bank)

☒ Administer PCC as per policy/procedure

☒ Repeat INR 15 minutes after PCC infusion completed TC

Alternate Therapy, if PCC Not Available or Contraindicated TC

☐ Transfuse plasma (FP) 10-15 mL/ kg _____ number of units of FP (3 - 4 units for adults)

INR results from post PCC infusion testing:

INR < 1.5 ☐ Indicates warfarin reversed, monitor as clinically indicated

INR > or = 1.5 ☐ Consider additional dose of PCC, consider alternative causes of coagulopathy

Practice Considerations

☐ Assess co-medications which may contribute to bleeding, e.g. antiplatelet therapies, selective serotonin reuptake inhibitors, non-steroidal anti-inflammatory drugs, fish oil

☐ Reassess anticoagulant dose and restart therapy when bleeding resolved. Prolonged anticoagulant interruption exposes patients to an increased risk of thrombosis, even in low risk patients, Thromboembolic Risk Considerations Table TC

Apixaban or Rivaroxaban Reversal

Calibrated anti-Xa Level ≥ 30 ng/mL or Test Unavailable and Suspected High Levels TC

Novel Anticoagulant Test Interpretation Tables TC

Calculated Creatinine Clearance and Half-life of Rivaroxaban TC

Calculated Creatinine Clearance and Half-life of Apixaban TC

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Apixaban or Rivaroxaban Reversal Continued…

Prothrombin Complex Concentrate (PCC) TC

Prothrombin Complex Concentrate (PCC) should not be administered if patient known as HIT positive

☐ PCC 2,000 units IV **STAT** (PCC product as supplied by Blood Bank)
- ☒ Administer PCC as per policy/procedure
- ☒ Repeat INR 15 minutes after PCC infusion completed TC

OR

☐ FEIBA _____ units (50 units/ kg, max 2,000 units) IV **STAT**

Adjunctive Therapy TC

Avoid tranexamic acid if bleeding source is genitourinary

☐ Tranexamic Acid 1 gram IV bolus, then 1 gram IV over 8 hours. Administer as per policy/procedure

Practice Considerations

☐ Assess co-medications which may contribute to bleeding, e.g. antiplatelet therapies, selective serotonin reuptake inhibitors, non-steroidal anti-inflammatory drugs, fish oil

☐ Reassess anticoagulant dose and restart therapy when bleeding resolved. Prolonged anticoagulant interruption exposes patients to an increased risk of thrombosis, even in low risk patients, Thromboembolic Risk Considerations Table TC

Dabigatran Reversal

Dilute thrombin time (Hemoclot®) Level ≥ 30 ng/ml or Test Unavailable and Suspected High Levels

Calculated Creatinine Clearance and Half-life of Dabigatran TC

Novel Anticoagulant Test Interpretation Tables TC

Idarucizumab

☐ Administer 5 grams of Idarucizumab in 2 doses, as ordered below:
- ☒ Idarucizumab 2.5 grams as a 50 mL bolus (1st dose)
- ☒ Idarucizumab 2.5 grams as a 50 mL bolus (2nd dose)
  - ☒ Administer second dose within 15 minutes after first dose

Alternative Therapy if Idarucizumab Not Available TC

Prothrombin Complex Concentrate (PCC) should not be administered if patient known as HIT positive

☐ PCC 2,000 units IV **STAT** (PCC product as supplied by Blood Bank)
- ☒ Administer PCC as per policy/procedure

☒ Repeat INR 15 minutes after PCC infusion completed TC

OR

☐ FEIBA _____ units (50 units/ kg, max 2,000 units) IV **STAT**

Adjunctive Therapy TC

☐ Hemodialysis, if available. Refer to specific dialysis orders

Avoid tranexamic acid if bleeding source is genitourinary

☐ Tranexamic Acid 1 gram IV bolus, then 1 gram IV over 8 hours. Administer as per policy/procedure

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Practice Considerations

- ☐ Assess co-medications which may contribute to bleeding, e.g. antiplatelet therapies, selective serotonin reuptake inhibitors, non-steroidal anti-inflammatory drugs, fish oil
- ☐ Reassess anticoagulant dose and restart therapy when bleeding resolved
- Thrombosis Canada Resource: See Anticoagulant Dosing Tool at www.thrombosiscanada.ca TC
- Prolonged anticoagulant interruption exposes patients to an increased risk of thrombosis, even in low risk patients, For risk considerations refer to Thromboembolic Risk Considerations Table TC

Moderate Bleeding

Priority: Interrupt Anticoagulant Therapy

Priority: Supportive Management

Transfusion therapy TC

For transfusion parameters refer to Transfusion Therapy Recommendations TC

Target Hemoglobin in active bleeding: greater than or equal to 70 g/L

☐ Group+Screen + Crossmatch for _____ unit(s) red blood cells (RBCs)

Target Platelet Count in active bleeding: greater than or equal to 50 x 10^9/L

☐ Group+Screen + Crossmatch for _____ unit(s) platelets

Labs

Refer to Initial Management Section on Page 1 of Anticoagulant-related Bleeding Management Order Set

☐ Ensure baseline labs drawn TC

Warfarin Reversal for Moderate Bleeding

Evaluate INR Results to Determine Actions TC

Vitamin K

☐ Vitamin K 5 mg in 50 mL normal saline IV **STAT** if INR 1.6 – 5.0

☐ Vitamin K 10 mg in 50 mL normal saline IV **STAT** if INR > 5.0 or ongoing major bleeding

Practice Considerations for Warfarin or NOAC Therapy

- ☐ Assess co-medications, which may contribute to bleeding, e.g. antiplatelet therapies, selective serotonin reuptake inhibitors, non-steroidal anti-inflammatory drugs, fish oil
- ☐ Reassess anticoagulant dose and restart therapy (if stopped) when bleeding resolved
- Thrombosis Canada Resource: See Anticoagulant Dosing Tool at www.thrombosiscanada.ca TC
  Refer to initial Management Section for: age, weight and serum creatinine
- Prolonged anticoagulant interruption exposes patients to an increased risk of thrombosis, even in low risk patients, For risk considerations refer to Thromboembolic Risk Considerations Table TC

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Minor Bleeding

Priority: Assess Anticoagulant Therapy

☐ Reassess anticoagulant dosing and restart therapy as clinically appropriate

- Thrombosis Canada Resource: See Anticoagulant Dosing Tool at www.thrombosiscanada.ca TC
  Refer to Initial Management Section for: age, weight and serum creatinine

Labs

Refer to Labs Section on Page 1 of Anticoagulant-related Bleeding Management Order Set

☐ Ensure baseline labs drawn TC

☐ Additional labs: _____

Practice Considerations

☐ Assess co-medications which may contribute to bleeding, e.g. antiplatelet therapies, selective serotonin reuptake inhibitors, non-steroidal anti-inflammatory drugs, fish oil

Priority: Minimize Risk of Recurrent Bleeding, Avoid Thrombotic Complications

Implementation Considerations

Patient Care Considerations

- The recommendations in this document are intended as general guidance, and do not replace clinical judgement. Physicians must consider relative risks and benefits in each patient when applying these recommendations.
- Drug specific levels, as well as recommended assays and thresholds for clinically relevant plasma NOAC concentrations are estimates based on available evidence that require further study/validation. The threshold may be higher or lower depending on the assay.
- **Hematology/Specialist Consultation:** Consultation with a specialist, including Hematologist that can add to patient care planning in acute bleeding cases is recommended if patient has: refractory bleeding, fails to respond to therapy, or for exploration of other causes of coagulation abnormalities (e.g. DIC, liver failure, etc.).
- **Hyperlinks:** Links to associated clinical documents are indicated in the document with a hyperlink format that can be clicked on to access the document. Hyperlinks appear in the documents as follows: hyperlink
- **Patient and Family Education Re: Thrombotic Risk with PCC:** Inform patients/families regarding small (< 2%) thrombotic risk of PCC, e.g. stroke MI, DVT, PE, but consequences of uncontrolled bleeding likely exceed this risk.
- **Thrombosis Canada Icon Use in Document:** TC These icons represent information that is recommended by Thrombosis Canada.

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