

Reversal of Anticoagulation Prior to EMERGENT PROCEDURE/SURGERY [5525]

This order set is intended for emergent anticoagulant reversal prior to procedure / surgery.

For emergent reversal of anticoagulation in the setting of life threatening bleed please refer to the Reversal for Anticoagulant-Induced Life-threatening Bleeding orderset.

For non-emergent reversal of warfarin (Coumadin) refer to the Non-Emergent Reversal of Warfarin (Coumadin) Anticoagulation (non-emergent procedure or supratherapeutic INR without bleeding) orderset.

DISCONTINUE ANTICOAGULANT

Laboratory

Baseline Laboratory

<input checked="" type="checkbox"/> Type and screen	STAT For 1 Occurrences
<input checked="" type="checkbox"/> CBC with platelet and differential	STAT For 1 Occurrences
<input checked="" type="checkbox"/> Prothrombin time with INR	STAT For 1 Occurrences
<input checked="" type="checkbox"/> Partial thromboplastin time, activated	STAT For 1 Occurrences
<input type="checkbox"/> Anti Xa Apixaban	STAT For 1 Occurrences
<input type="checkbox"/> Anti Xa Rivaroxaban	STAT For 1 Occurrences
<input type="checkbox"/> Anti Xa, unfractionated	STAT For 1 Occurrences
<input type="checkbox"/> Anti Xa, low molecular weight	STAT For 1 Occurrences

Heparin Name:

Follow-up Laboratory

<input checked="" type="checkbox"/> CBC with platelet and differential	Every 6 hours For 24 Hours Draw lab one hour after reversal
<input checked="" type="checkbox"/> Prothrombin time with INR	Every 6 hours For 24 Hours Draw lab one hour after reversal. Only for reversal of warfarin.
<input checked="" type="checkbox"/> Partial thromboplastin time, activated	Every 6 hours For 24 Hours Draw lab one hour after reversal. Only for reversal of heparin.

Medications and Additional Laboratory

Reversal for associated anticoagulant (Single Response) (Selection Required)

- apixaban (ELIQUIS), rivaroxaban (XARELTO), edoxaban (SAVAYSA)

Prolonged reversal: Andexanet alfa has NOT been studied for anticoagulant reversal prior to procedure due to its short half-life with anti-FXa activity increasing after the 2-hours infusion. If need for prolonged reversal is anticipated, please consider use of prothrombin complex concentrate (KCentra)

Andexanet alfa prior to procedures where heparin is required: Using andexanet alfa prior to surgery could lead to heparin resistance or unresponsiveness secondary to andexanet alfa binding to heparin-activated anti-thrombin. If heparin will be used during the procedure, please consider use prothrombin complex concentrate (Kcentra)

Medications (Single Response)

- Andexanet alfa (Andexxa®) infusion (RESTRICTED) - when prolonged reversal (>2 hours) NOT REQUIRED and/or heparin WILL NOT be used during procedure (Single Response)

Fa Inhibitor FXa Inhibitor Last Dose Timing of FXa Inhibitor Last Dose Before Andexanet alfa Initiation

<8 Hours or Unknown ?8 Hours

Apixaban ?5 mg Low dose Low dose

>5 mg or unknown High dose

Rivaroxaban ?10 mg Low dose

>10 mg or unknown High dose

High dose should also be used for patients ?7 hours since last administration of treatment dose enoxaparin ? 1 mg/kg in a patient allergic to protamine.

- Low Dose Option (Single Response)

() Central Line Administration	"Followed by" Linked Panel
<input type="checkbox"/> factor Xa, inactivated-zhzo (ANDEXXA) IV solution (RESTRICTED)	400 mg, intravenous, for 15 Minutes, once, For 1 Doses Do not exceed 30 mg/min for bolus rate Andexxa® is restricted to attending-level physicians. Are you an attending-level provider or ordering on behalf of one? Andexanet alfa has NOT been studied for anticoagulant reversal prior to procedure due to its short half-life with anti-FXa activity increasing after the 2-hour infusion. Is need for prolonged reversal (>2 hours) anticipated? Using andexanet alfa prior to surgery could lead to heparin resistance or unresponsiveness secondary to andexanet alfa binding to heparin-activated anti-thrombin. Will heparin be used during the procedure?
<input type="checkbox"/> recombinant coagulation factor Xa (ANDEXXA) Low Dose 500 mg infusion (RESTRICTED)	4 mg/min, intravenous, for 120 Minutes, once, Starting H+15 Minutes, For 1 Doses Andexxa® is restricted to attending-level physicians. Are you an attending-level provider or ordering on behalf of one? Andexanet alfa has NOT been studied for anticoagulant reversal prior to procedure due to its short half-life with anti-FXa activity increasing after the 2-hour infusion. Is need for prolonged reversal (>2 hours) anticipated? Using andexanet alfa prior to surgery could lead to heparin resistance or unresponsiveness secondary to andexanet alfa binding to heparin-activated anti-thrombin. Will heparin be used during the procedure?
<input type="checkbox"/> sodium chloride 0.9 % bolus 50 mL	50 mL, intravenous, at 600 mL/hr, for 5 Minutes, once, For 1 Doses Administer 50 mL through the SAME line that the Andexxa infusion was administered through (to flush the line)
() Peripheral Line Administration	"Followed by" Linked Panel
<input type="checkbox"/> andexanet alfa (ANDEXXA) Peripheral Line IV Bolus (RESTRICTED)	400 mg, intravenous, for 15 Minutes, once, For 1 Doses Do not exceed 30 mg/min for bolus rate. Andexxa® is restricted to attending-level physicians. Are you an attending-level provider or ordering on behalf of one? Andexanet alfa has NOT been studied for anticoagulant reversal prior to procedure due to its short half-life with anti-FXa activity increasing after the 2-hour infusion. Is need for prolonged reversal (>2 hours) anticipated? Using andexanet alfa prior to surgery could lead to heparin resistance or unresponsiveness secondary to andexanet alfa binding to heparin-activated anti-thrombin. Will heparin be used during the procedure?
<input type="checkbox"/> recombinant coagulation factor Xa (ANDEXXA) Low Dose 480 mg Peripheral Line infusion (RESTRICTED)	4 mg/min, intravenous, for 120 Minutes, once, Starting H+15 Minutes, For 1 Doses Andexxa® is restricted to attending-level physicians. Are you an attending-level provider or ordering on behalf of one? Andexanet alfa has NOT been studied for anticoagulant reversal prior to procedure due to its short half-life with anti-FXa activity increasing after the 2-hour infusion. Is need for prolonged reversal (>2 hours) anticipated? Using andexanet alfa prior to surgery could lead to heparin resistance or unresponsiveness secondary to andexanet alfa binding to heparin-activated anti-thrombin. Will heparin be used during the procedure?
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() High Dose Option (Single Response)	"Followed by" Linked Panel
<input type="checkbox"/> Central Line Administration	"Followed by" Linked Panel

<input type="checkbox"/> andexanet alfa (ANDEXXA) IV Bolus (RESTRICTED)	800 mg, intravenous, for 30 Minutes, once, For 1 Doses Do not exceed 30 mg/min for bolus Andexxa® is restricted to attending-level physicians. Are you an attending-level provider or ordering on behalf of one? Andexanet alfa has NOT been studied for anticoagulant reversal prior to procedure due to its short half-life with anti-FXa activity increasing after the 2-hour infusion. Is need for prolonged reversal (>2 hours) anticipated? Using andexanet alfa prior to surgery could lead to heparin resistance or unresponsiveness secondary to andexanet alfa binding to heparin-activated anti-thrombin. Will heparin be used during the procedure?
<input type="checkbox"/> recombinant coagulation factor Xa (ANDEXXA) High Dose 960 mg Central Line infusion (RESTRICTED)	8 mg/min, intravenous, for 120 Minutes, once, Starting H+30 Minutes, For 1 Doses Andexxa® is restricted to attending-level physicians. Are you an attending-level provider or ordering on behalf of one? Andexanet alfa has NOT been studied for anticoagulant reversal prior to procedure due to its short half-life with anti-FXa activity increasing after the 2-hour infusion. Is need for prolonged reversal (>2 hours) anticipated? Using andexanet alfa prior to surgery could lead to heparin resistance or unresponsiveness secondary to andexanet alfa binding to heparin-activated anti-thrombin. Will heparin be used during the procedure?
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<input type="checkbox"/> sodium chloride 0.9 % bolus 50 mL	50 mL, intravenous, at 600 mL/hr, for 5 Minutes, once, For 1 Doses Administer 50 mL through the SAME line that the Andexxa infusion was administered through (to flush the line)
() STAT Prothrombin complex concentrate (KCentra) IV - when prolonged reversal (>2 hours) REQUIRED and/or heparin WILL be used during procedure (Single Response)	

Avoid use in disseminated intravascular coagulopathy (DIC). May contain heparin, avoid use in heparin induced thrombocytopenia (HIT). Closely monitor for thromboembolic events during and after administration. Use has not been evaluated in patients who have experienced a thromboembolic event, MI, CVA, TIA, unstable angina, or severe peripheral vascular disease within the prior 3 months.

prothrombin complex human (KCENTRA) 2,000 Units, intravenous, for 20 Minutes, once, For 1 Doses
injection 2,000 Units

dabigatran (PRADAXA)

Consult Nephrology/Hyperten Reason for Consult?
Patient/Clinical information communicated?
Patient/clinical information communicated?

idaruCIZUmab (PRAXBIND)

Note: For Hereditary Fructose Intolerance Patients - idarucizumab contains 4 gm of sorbitol as an excipient

2.5 gram x 2 doses = 5 grams total dose delivered

idaruCIZUmab (PRAXBIND) IVPB solution - 2.5 g, intravenous, at 300 mL/hr, for 10 Minutes, every 10 min, For 2
2.5 gm x 2 doses = 5 gm total dose Doses
Administer 2.5 grams x 2 doses for a total dose of 5 grams delivered.
Administer no more than 15 minutes apart.

heparin

Medications (Single Response)

MAX single dose of protamine IV should not exceed 50 mg

Protamine for one-time dose of Heparin (i.e. bolus) **"And" Linked Panel**

Exposure to heparin less than 30 minutes ago, give 1 mg of protamine for every 100 units of unfractionated heparin

Exposure to heparin 30-60 minutes ago, give 0.5 mg of protamine for every 100 units of unfractionated heparin

Exposure to heparin was greater than 2 hours ago, give 0.25 mg of protamine for each 100 units of unfractionated heparin

Degree of reversal can be expressed with aPTT and/or anti-factor Xa Activity.

Use with caution in patients with a history of vasectomy, previous exposure to protamine through protamine-containing insulins or with known fish allergy.

Do NOT exceed a dose rate of 5 mg/minute. MAX Dose of protamine is 50 mg.

protamine injection intravenous, once, For 1 Doses
Do not exceed a dose administration rate of 5 mg/min.

Protamine for prolonged exposure of Heparin (i.e. IV infusion) **"And" Linked Panel**

Use only the last 3 hours of heparin exposure prior to reversal when considering the total amount of heparin administered to the patient:

- For every 100 units of heparin patient received in last hour give 1 mg of protamine

- For every 100 units of heparin the patient received in the 2nd hour, give 0.5 mg of protamine

- For every 100 units of heparin the patient received in the 3rd hour, give 0.25 mg of protamine

Degree of reversal can be expressed with aPTT and/or anti-factor Xa Activity. Contact pharmacy if assistance is required in determining amount of heparin administered to the patient over time.

Use with caution in patients with a history of vasectomy, previous exposure to protamine through protamine-containing insulins or with known fish allergy.

Do NOT exceed a dose rate of 5 mg/minute. MAX Dose of protamine is 50 mg.

protamine injection intravenous, once, For 1 Doses
Do not exceed a dose administration rate of 5 mg/min

low molecular weight heparin: enoxaparin (LOVENOX)
or dalteparin (FRAGMIN)

Protamine for partial neutralization (60%) (Single Response)

Recommended dosing provided:

Last dose of LMWH was less than 8 hours - for each 1 mg of enoxaparin use 1 mg of protamine
- for each 100 units of dalteparin use 1 mg of

protamine

Last dose of LMWH was between 8 to 12 hours - for each 1 mg of enoxaparin administer 0.5 mg of protamine.
- for each 100 units of dalteparin use 0.5 mg of protamine

Last dose of LMWH was greater than 12 hours - administration of protamine is not recommended

Degree of reversal can be expressed with aPTT and/or anti-factor Xa Activity.

Use with caution in patients with a history of vasectomy, previous exposure to protamine through protamine-containing insulins or with known fish allergy.

Do NOT exceed a dose rate of 5 mg/minute. MAX Dose of protamine is 50 mg.

protamine injection intravenous, once, For 1 Doses
Do not exceed a dose administration rate of 5 mg/min.

Andexanet alfa (Andexxa®) infusion (RESTRICTED)
(Single Response)

Fa Inhibitor FXa Inhibitor Last Dose Timing of FXa Inhibitor Last Dose Before Andexanet alfa Initiation

<8 Hours or Unknown ?8 Hours
Apixaban ?5 mg Low dose Low dose
>5 mg or unknown High dose
Rivaroxaban ?10 mg Low dose
>10 mg or unknown High dose

High dose should also be used for patients ?7 hours since last administration of treatment dose enoxaparin ? 1 mg/kg in a patient allergic to protamine.

Low Dose Option (Single Response)

Central Line Administration

"Followed by" Linked Panel

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Do not exceed 30 mg/min for bolus rate
Andexxa® is restricted to attending-level physicians. Are you an attending-level provider or ordering on behalf of one?
Andexanet alfa has NOT been studied for anticoagulant reversal prior to procedure due to its short half-life with anti-FXa activity increasing after the 2-hour infusion. Is need for prolonged reversal (>2 hours) anticipated?
Using andexanet alfa prior to surgery could lead to heparin resistance or unresponsiveness secondary to andexanet alfa binding to heparin-activated anti-thrombin. Will heparin be used during the procedure?

recombinant coagulation factor Xa (ANDEXXA) Low Dose 500 mg infusion (RESTRICTED) 4 mg/min, intravenous, for 120 Minutes, once, Starting H+15 Minutes, For 1 Doses
Andexxa® is restricted to attending-level physicians. Are you an attending-level provider or ordering on behalf of one?
Andexanet alfa has NOT been studied for anticoagulant reversal prior to procedure due to its short half-life with anti-FXa activity increasing after the 2-hour infusion. Is need for prolonged reversal (>2 hours) anticipated?
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sodium chloride 0.9 % bolus 50 mL 50 mL, intravenous, at 600 mL/hr, for 5 Minutes, once, For 1 Doses
Administer 50 mL through the SAME line that the Andexxa infusion was administered through (to flush the line)

Peripheral Line Administration

"Followed by" Linked Panel

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() High Dose Option (Single Response)	
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<input type="checkbox"/> sodium chloride 0.9 % bolus 50 mL	50 mL, intravenous, at 600 mL/hr, for 5 Minutes, once, For 1 Doses Administer 50 mL through the SAME line that the Andexxa infusion was administered through (to flush the line)
<input type="checkbox"/> warfarin (COUMADIN)	
<input type="checkbox"/> phytonadione (vitamin K1) (AQUA-MEPHYTON) 10 mg in sodium chloride 0.9% 50 mL IVPB	10 mg, intravenous, for 30 Minutes, once, For 1 Doses Indication: Warfarin Reversal for Procedure or Bleeding
<input type="checkbox"/> prothrombin complex human (KCENTRA) injection (Single Response)	Avoid use in disseminated intravascular coagulopathy (DIC). May contain heparin, avoid use in heparin induced thrombocytopenia (HIT). Closely monitor for thromboembolic events during and after administration. Use has not been evaluated in patients who have experienced a thromboembolic event, MI, CVA, TIA, unstable angina, or severe peripheral vascular disease within the prior 3 months.
<input type="checkbox"/> Weight LESS THAN 100 kg AND INR LESS THAN 7.5	1,500 Units, intravenous, for 20 Minutes, once, For 1 Doses
<input type="checkbox"/> Weight GREATER THAN 100 kg OR INR GREATER THAN 7.5	2,000 Units, intravenous, for 20 Minutes, once, For 1 Doses
<input type="checkbox"/> Fresh Frozen Plasma	
<input type="checkbox"/> Prepare fresh frozen plasma	Routine Transfusion Indications: Transfusion date:
<input type="checkbox"/> Transfuse fresh frozen plasma	Routine Transfusion duration per unit (hrs):
<input type="checkbox"/> sodium chloride 0.9% infusion	250 mL, intravenous, at 30 mL/hr, continuous Administer with blood