SUMMARY OF CRITERIA FOR USE (RESTRICTED DRUG LIST):

In the absence of contraindications, alteplase is recommended for patients with:
- **Massive PE**: Diagnostically confirmed PE with profound hypotension without a high bleeding risk
  
  or

- **Submassive PE**: Diagnostically confirmed PE without profound hypotension but with ongoing instability despite starting anticoagulation
  
  or

- Profound hypotension without another clear cause, a high clinical pretest probability of PE and evidence of right ventricular dysfunction on echo when diagnostic imaging cannot be performed

**Contraindications**

<table>
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<th>Absolute</th>
<th>Relative</th>
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<tr>
<td>• Any history of intracranial hemorrhage (ICH)</td>
<td>• Age over 75 years</td>
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<td>• Structural intracranial cerebrovascular disease (arteriovenous malformation, aneurysm)</td>
<td>• Traumatic or prolonged cardiopulmonary resuscitation (over 10 minutes)</td>
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<td>• Malignant intracranial neoplasm</td>
<td>• Pregnancy</td>
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<td>• Recent ischemic stroke (within 3 months)</td>
<td>• Non-compressible vascular punctures</td>
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<td>• Suspected aortic dissection</td>
<td>• Therapeutic anticoagulation on presentation</td>
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<td>• Active bleeding or bleeding diathesis</td>
<td>• Recent internal bleeding (within 2 to 4 weeks)</td>
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<td>• Recent surgery involving / around the spinal cord or brain</td>
<td>• History of chronic, severe, and poorly controlled hypertension</td>
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<td>• Recent significant head trauma with radiographic evidence of fracture or brain injury</td>
<td>• Severe uncontrolled hypertension on presentation [systolic blood pressure (SBP) over 180 mm Hg or diastolic blood pressure (DBP) over 110 mm Hg]</td>
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<tr>
<td></td>
<td>• Remote ischemic stroke (over 3 months ago)</td>
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<td>• Major surgery within 3 weeks</td>
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<td>• Dementia</td>
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**INDICATIONS:**

1. Diagnostically confirmed pulmonary embolism with profound hypotension (SBP less than 90 mmHg or a drop of 40 mmHg for at least 15 minutes with evidence of poor perfusion) without a high bleeding risk

2. Diagnostically confirmed pulmonary embolism without profound hypotension but with ongoing instability despite starting anticoagulation and likely to develop hypotension as above based on:
   a. a significant SBP decrease not meeting the criteria above
   b. tachycardia
   c. elevated JVP
   d. hypoxemia
   e. poor tissue perfusion supplemented with:
   f. elevated troponin I levels
   g. right bundle-branch block
   h. S1-Q3-T3 and T wave inversion in leads V1 to V4 on ECG
   i. RV hypokinesis on echo
Alteplase

Alteplase For Pulmonary Embolism (PE)

j. RV enlargement on CTPA

3. Profound hypotension without another clear cause, a high clinical pretest probability of PE and evidence of right ventricular dysfunction on echo when diagnostic imaging cannot be performed

DOSAGE AND ADMINISTRATION:

Alteplase 100 mg IV over 2 hours.

Reconstitute alteplase 100 mg vial with preservative-free sterile water 100 mL vial provided using transfer set in same package. Swirl the alteplase vial gently to remove bubbles. Infuse IV over 2 hours. Volumetric pump required to control infusion rate.

Note: Patients being treated for PE with alteplase should also be receiving treatment with IV heparin (via a separate IV line) or subcutaneous low-molecular weight heparin.

Adverse Effects:

Bleeding (including ICH), allergic reactions

Monitoring:

- Baseline CBC, PT, INR, aPTT
- All potential bleeding sites (catheter insertion sites, arterial, venous or needle puncture sites, etc.) should be observed closely
- Vital signs q1h during infusion

References:


e-CPS 2013 Activase rt-PA Product Monograph

Prepared by: Jason Volling – September 2013
Reviewed by: Amita Woods, PharmD, Brenda Ksic BScPhm, Gary Wong BScPhm – November 2013
Approved by: Cardiovascular Subcommittee – November 2013
Pharmacy & Therapeutics Committee – November 2013
Cardiac Diseases and Therapies
Alteplase

Alteplase For Pulmonary Embolism (PE)

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1. Purpose of the Pharmacotherapy Handbook.

Notice to Healthcare Providers:
The Pharmacotherapy Handbook is intended to be used as a tool to aid in the appropriate prescribing and administration of cardiovascular formulary agents.

This information in this Handbook is intended for use by and with experienced physicians and pharmacists. The information is not intended to replace sound professional judgment in individual situations, and should be used in conjunction with other reliable sources of information. Decisions about particular medical treatments should always be made in consultation with a qualified medical practitioner knowledgeable about Cardiovascular illness and the treatments in question.

Due to the rapidly changing nature of cardiovascular treatments and therapies, users are advised to recheck the information contained herein with the original source before applying it to patient care.

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Your comments on the usefulness of the resources contained in the Handbook are welcomed and may be forwarded to Amita Woods, Department of Pharmacy Services (amita.woods@uhn.ca).

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