

Drug Name: **Thrombolytics/Fibrinolytics**  
Trade Name: **tPA, Retavase, Streptase, Alteplase**

REVISED: **November 1, 2018**

**Class:**

- Thrombolytics/Fibrinolytics

**Mechanism of Action:**

- Thrombolytics activate the enzyme plasminogen, which in turn becomes plasmin, the body's major enzyme for clot breakdown. This makes a clot soluble, and susceptible to further degradation by other enzymes.
- Alteplase is naturally occurring in the body, on the endothelial wall of blood vessels.
- Other thrombolytics (ex. Reteplase, Streptokinase) are modified Alteplase molecules.

**Indications:**

- CVA – non-hemorrhagic
- Myocardial infarction
- Pulmonary embolus
- Femoral occlusion

**Contraindications:**

- Hypersensitivity
- Recent Surgery – any type (<10 days)
- Brain or spinal surgery within 2 months
- GI/GU bleeding
- Uncontrolled Hypertension
  - CVA: (BP > 185 SBP or 110 DBP)
  - STEMI: (BP > 180 SBP or 110 DBP)
- Active internal hemorrhage, intercranial hemorrhage, or uncontrolled external hemorrhage
- Previous CVA (any type) within 2 months
- Uncontrolled active hemorrhage (exception for DIC)

**Precautions:**

- Pregnancy category C

**Dosage:**

Doses are highly variable and based on institutional guidelines and patient laboratory values. Double check orders with transferring physician.

- Alteplase (tissue plasminogen activator, tPA)
  - Adult dosing MI: 15 mg IV bolus, then 0.75 mg/kg over the next 30 minutes, then 0.5 mg/kg over 60 minutes.
  - Adult Dosing CVA: 0.9 mg/kg infused over 60 minutes; initially, give 10% of the dose over one minute, and then the remaining 90% of the dose over the next sixty minutes.
- Reteplase (Retavase)
  - Adult dose MI: 10 units IV bolus over 2 minutes; then, 30 minutes later, give second 10 unit IV bolus over 2 minutes; administer with Heparin and Aspirin.

# IFT

REFERENCE ONLY

This document is for **reference only**. Please refer to Physician Order's for specific indications, dosages, and applications

IFT DRUG: Thrombolytics/Fibrinolytics

- **Streptokinase (Streptase)**
  - Adult dose MI: 1.5 million units administered via IV infusion over one hour

**Onset:**

- IV/IO: Immediate

**Duration:**

- Based on infusion duration

**Side Effects:**

- Hemorrhage
- Thrombocytopenia

**Interactions:**

- Additive effect on bleeding with other anticoagulants, ASA, NSAID

**PEARLS:**

If spontaneous hemorrhage develops, evidenced by hematuria, hematemesis, epistaxis, ecchymosis, etc., immediately contact medical control with regards to discontinuing administration.

Observe and monitor for intracranial bleeding. If signs of intracranial hemorrhage or decreased mental status develop, immediately discontinue infusion first, contact medical control and expedite transport.

- Confirm hemodynamic parameters prior to transfer, particularly upper blood pressure limits.
- These infusions often are co-administered with Heparin or similar infusions.
- When administering to the patient with AMI, (the most likely to receive this medication), watch the ECG closely for re-perfusion dysrhythmias. Reperfusion arrhythmias are usually short lived and asymptomatic.
- Streptokinase is rarely used.
- Avoid new puncture sites and monitor for bleeding. Monitor closely for anaphylaxis. Most common with streptokinase.

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