

Thrombolytic Therapy (Tenecteplase/ TNK-tPA/ Metalyse) in Accident & Emergency Department for patients with Acute Myocardial Infarction

Introduction

Myocardial infarction (MI) is the injury and necrosis of cardiac muscle cells due to ischemia. Most acute myocardial infarctions (AMI) occur as a result of thrombus formation at the site of an atherosclerotic plaque inside a coronary artery.

Thrombolytic therapy is the use of a drug (thrombolytic agent), to produce rapid lysis of the occluding thrombus (or embolus). It directly treats the initiating cause of myocardial infarction.

Thrombolytic therapy is an established treatment for patients with AMI who do not have contraindication to its use. Its benefits on survival and clinical outcome have been well established in numerous research studies worldwide.

Although thrombolytic therapy may have potential complications, in general, they are outweighed by its benefits. It is now considered one of the standard treatment options.

One of the thrombolytic agents used in Hong Kong is Tenecteplase.

The Procedure (Tenecteplase administration)

Tenecteplase is given by intravenous injection. The patient will be closely monitored during and after the injection. Generally, the patient will be admitted into the appropriate hospital unit after a short period of monitoring in the A&E Department.

Potential Risks and Complications

Thrombolytic therapy may have potential complications. However, serious complications are relatively rare. In general, the benefit of thrombolytic therapy outweighed its potential complications.

Potential complications of Tenecteplase include:

1. Bleeding complications (around 5%)
 - Most significant complications of thrombolytic therapy
 - Usually minor
 - May cause catastrophic bleeding (including intracranial hemorrhage)
 - Overall incidence of intracranial hemorrhage (around 0.9%). Risk varies with presence of risk factors
 - Resultant mortality rate of intracranial hemorrhage is around 50-60%
 - Risk factors include:
 - Old age (> 65)

- Small size (body weight < 70 kg)
 - Hypertension on presentation
 - History of stroke
2. Allergic reactions
 - Usually minor
 - Rarely may cause anaphylaxis (severe allergic reaction)
 3. Hypotension during infusion
 - Usually transient, minor and reversible
 4. Transient arrhythmia related to reperfusion
 - Usually not serious
 - Note: Patients with AMI are prone to have arrhythmia, which may be life-threatening and this is not related to whether thrombolytic therapy is used or not

Post-treatment Management

Post treatment management will be provided by the receiving clinical unit.

Complications listed above, especially bleeding complications (including intracranial hemorrhage), may still occur in the post-treatment period.

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In different patient groups, the actual risk may be different. For further information please contact your doctor.