EMA/575895/2023
EMEA/H/C/306

Metalyse *(tenecteplase)*

An overview of Metalyse and why it is authorised in the EU

What is Metalyse and what is it used for?

Metalyse is a medicine used to dissolve blood clots that have formed in the blood vessels of adults who have had:

- a suspected acute (sudden) myocardial infarction (heart attack) within six hours of the first symptoms appearing;
- an acute ischaemic stroke (caused by failure of blood supply to part of the brain) within 4.5 hours of the first symptoms appearing. Metalyse is used when it has been confirmed that the acute ischaemic stroke is not associated with bleeding in the brain.

Metalyse contains the active substance tenecteplase.

How is Metalyse used?

Metalyse can only be obtained with a prescription. The medicine should be prescribed by doctors experienced in the use of thrombolytic treatments (treatments to dissolve blood clots).

Metalyse is given once as a single injection into a vein. The dose depends on the disease being treated and the patient's weight. Treatment with Metalyse should be started as soon as possible after the start of symptoms of a heart attack or acute ischaemic stroke. Before Metalyse is used to treat an acute ischaemic stroke, imaging of the brain (usually by a computed tomography (CT) scan) will be done to confirm that there is no bleeding in the brain.

When Metalyse is used to treat a heart attack, the patient should also be treated with other medicines that are used to prevent blood clots such as aspirin and heparin. However, due to an increased risk of bleeding, patients who have received Metalyse for acute ischaemic stroke should not be given either aspirin or heparin within 24 hours of being treated with the medicine.

How does Metalyse work?

The active substance in Metalyse, tenecteplase, is a modified copy of the human enzyme 'tissue plasminogen activator', which the body uses to break down clots. It works by converting a protein in the clots called plasminogen into its active form, plasmin, which breaks down the fibrous protein holding the clot together. When the blood clot breaks down, blood flows more easily through the blood vessels into the heart and brain. This allows the heart and brain to keep working, which can help to save the patient's life.

Official address Domenico Scarlattilaan 6 ● 1083 HS Amsterdam ● The Netherlands
Address for visits and deliveries Refer to www.ema.europa.eu/how-to-find-us
Send us a question Go to www.ema.europa.eu/contact **Telephone** +31 (0)88 781 6000 An agency of the European Union

What benefits of Metalyse have been shown in studies?

Heart attack

In a main study involving around 17,000 adults who were having a heart attack, Metalyse was at least as effective as alteplase (another medicine used to treat heart attacks) in keeping patients alive after the heart attack. The patients were given either medicine within six hours of their symptoms appearing in addition to either aspirin or heparin. The main measure of effectiveness was the number of patients who were alive 30 days after treatment. Around 94% of patients who received either medicine were alive 30 days after treatment.

Acute ischaemic stroke

In a main study involving 1,577 adults who had an acute ischaemic stroke, Metalyse was at least as effective as alteplase at reducing the level of disability patients experienced after the stroke. Levels of disability were evaluated using the modified Rankin scale (mRS), a 7-point scoring system which measures the degree of disability or level of dependence in daily activities of people who had a stroke. Higher scores indicate more severe levels of disability or dependence. After 90 to 120 days following the stroke, around 37% of patients given Metalyse had an mRS score of 0 (no symptoms related to the nervous system) or 1 (no significant disability despite symptoms related to the nervous system) compared to around 35% of patients given alteplase.

What are the risks associated with Metalyse?

For the full list of side effects and restrictions with Metalyse, see the package leaflet.

The most common side effect with Metalyse (which can affect up to 1 in 10 people) includes haemorrhage (bleeding). The most common bleedings (which can affect up to 1 in 100 people) are epistaxis (nosebleeds), gastrointestinal haemorrhage (bleeding in the stomach or gut), ecchymosis (bleeding beneath the skin), urogenital haemorrhage (bleeding from the structures that carry urine or from the genital area), bleeding at the injection site, and at the skin puncture site.

Metalyse must not be used in people who are hypersensitive (allergic) to tenecteplase, gentamicin (an ingredient found in the medicine) or any of the other ingredients in Metalyse. If treatment is necessary in these patients, facilities for resuscitating them must be readily available.

Metalyse must not be used in patients with a significant bleeding disorder either currently or in the past 6 months, in patients who have had major surgery, biopsy of the kidneys, adrenal glands, liver, spleen, or pancreas or significant trauma in the past 2 months, in patients with severe liver dysfunction, acute pancreatitis (sudden inflammation of the pancreas), acute pericarditis (sudden inflammation of the lining around the heart) and/or subacute bacterial endocarditis (serious infection of the heart's inner lining and valves caused by bacteria) and in patients with a disease which may cause bleeding (such as severe high blood pressure).

For the treatment of acute myocardial infarction, Metalyse must also not be used in patients with a history of haemorrhagic stroke (when a blood vessel in the brain or on the surface of the brain leaks or breaks open, causing bleeding in or around the brain), stroke of unknown origin or in those who have experienced an ischaemic stroke or transient ischaemic attack (when blood flow to the brain stops for a short period of time) in the past six months or in patients with dementia.

For the treatment of acute ischaemic stroke, Metalyse must also not be used in patients who are suspected of having or have a history of bleeding in the brain, patients with diabetes that have had a stroke, patients who have had a stroke in the past 3 months or patients with a severe stroke.

Why is Metalyse authorised in the EU?

The European Medicines Agency decided that Metalyse's benefits are greater than its risks and it can be authorised for use in the EU.

The Agency considered that while Metalyse was as at least as effective as alteplase in preventing death in people having a heart attack, it caused less serious bleeding, which meant fewer blood transfusions. Metalyse was also shown to be at least as effective as alteplase in reducing the level of disability caused by a stroke in patients with acute ischaemic stroke who are eligible for intravenous thrombolysis (medicines given as an injection into a vein that dissolve blood clots blocking blood flow). Overall, the safety profile of Metalyse is considered manageable.

What measures are being taken to ensure the safe and effective use of Metalyse?

Recommendations and precautions to be followed by healthcare professionals and patients for the safe and effective use of Metalyse have been included in the summary of product characteristics and the package leaflet.

As for all medicines, data on the use of Metalyse are continuously monitored. Suspected side effects reported with Metalyse are carefully evaluated and any necessary action taken to protect patients.

Other information about Metalyse:

Metalyse received a marketing authorisation valid throughout the EU on 23 February 2001.

Further information on Metalyse can be found on the Agency's website: ema.europa.eu/medicines/human/EPAR/metalyse

This overview was last updated in 01-2024.