INSTRUCTIONS
for medical use of the drug

INGAMIST
(INGAMIST)

Composition:
active ingredient: acetylcysteine;
1 ml contains 100 mg of acetylcysteine
Excipients: disodium edetate, sodium hydroxide, water for injection.

Dosage form: Solution for injection
Basic physical and chemical properties: clear, colourless liquid with a faint odour of sulphur.
Faint pink-purple colour tone may appear after opening the ampoule in prolonged contact with the air.

Pharmacotherapeutic group. Mucolytic agent. ATC code R05C B01.

Pharmacological properties.
Pharmacodynamics.

Acetylcysteine liquefies sputum. Sulfhydryl groups in the structure of acetylcysteine help to break disulphide bonds of acidic mucopolysaccharides of the mucus, leading to depolarization of mucoproteides and reduction of sputum viscosity. The drug remains active in the presence of purulent sputum.

Acetylcysteine has an antioxidant effect due to the presence of a nucleophilic thiol SH-group, readily gives hydrogen neutralizing oxidizing radicals.

The protective mechanism of acetylcysteine is based on the ability of its reactive sulfhydryl groups to bind free radicals.
Acetylcysteine easily penetrates cells, is deacetylated to L-cysteine, from which intracellular glutathione is synthesized.

Glutathione is a highly reactive tripeptide, a powerful antioxidant, cytoprotector, catching the endogenous and exogenous free radicals, toxins. Acetylcysteineprevents depletion and promotes the synthesis of intracellular glutathione involved in redox processes of cells, thus contributing to the detoxification of harmful substances.

Pharmacokinetics.
Maximum plasma concentration of 600 mg acetylcysteine, when administered intravenously, is 300 mmol/l, the half-life is 2 hours. Total clearance is 0.21 l/h/kg and volume of distribution to the plateau is 0.34 l/kg. Acetylcysteine penetrates into the extracellular space, is mainly distributed in liver, kidneys, lungs, bronchial secretion. Acetylcysteine and its metabolites are excreted primarily by the kidneys.

Clinical characteristics.
Indications.

Acute and chronic respiratory diseases, accompanied by increased formation of sputum.

Contraindications.

Hypersensitivity to acetylcysteine or other components of the drug, gastric ulcer and duodenal ulcer in the acute stage, haemoptysis, pulmonary haemorrhage.

Interaction with other drugs and other forms of interaction.

Concomitant use of acetylcysteine with antitussives may enhance sputum stagnation due to the suppression of the cough reflex.

Concomitant administration of acetylcysteine and nitroglycerin may lead to increased vasodilatory effect of nitroglycerin. Patients should be warned about the possible decrease of blood pressure and occurrence of headaches.

The use of antibiotics and acetylcysteinein the same syringe is not recommended: decrease in the activity of antibiotics is possible.

Due to the ability to form chelate structures acetylcysteine may reduce the bioavailability of the salts of such metals as gold, calcium, and iron. Therefore, it is recommended to use these drugs at different time.

Investigations

Use of acetylcysteine can alter the results of quantitative determination of salicylates using colorimetric method, and the results of ketone determination in the urine.

Special warnings and precautions for use.

Patients with bronchial asthma, during therapy with Ingamist should be under medical supervision. In the case of bronchospasm the administration of acetylcysteine should be discontinued immediately.

Ingamist should be used with caution in patients with a history of peptic ulcer disease, especially in the case of concomitant administration of other drugs that irritate the gastric mucosa.

Administration of acetylcysteine, mainly at the beginning of therapy, makes bronchial gland secret less viscous and can increase its volume. If the patient can not cough up sputum effectively, it is necessary to make postural drainage and aspiration of the contents of the bronchi.

The drug should be administered intravenously under strict medical supervision. Adverse effects with intravenous acetylcysteine may occur more frequently when the drug is administered too quickly or in high doses. Therefore, it is recommended to strictly follow the instructions, given in the section "Posology and method of administration".

The drug contains 43 mg (1.9 mmol) of sodium in one ampoule. This should be considered in patients, who are on sodium-controlled diet.

Ingamist solution should not come into contact with rubber and metal surfaces.

Faint sulphur odour of solution is the characteristic odour of the active ingredient.

When administered intravenously the ampoule should be opened immediately before use of the drug. In case of topical use it is possible to

partially use the contents of the ampoule: the remaining solution may be used (when stored according to the storage conditions) during 24 hours *only for topical use*; the administration of the remaining solution *for injection is prohibited*.

Use during pregnancy and lactation

During pregnancy and lactation the use of acetylcysteine is possible only if the expected benefit to the mother outweighs the potential risk to the foetus or child, under the direct supervision of the physician.

Effects on ability to drive and use other machines.

There is no evidence of the effect on the reaction rate.

Posology and method of administration.
Local application

Inhalation: in adults 1 ampoule 1-2 times daily as prescribed during 5-10 days, in children aged over 6 years - up to 1 ampoule 1-2 times daily as prescribed during 5-10 days.
Endobronchial administration: in adults and children aged over 6 years - up to 1 mg 1-2 times a day.

Systemic application

Intramuscular administration
In adults 1 ampoule of 300 mg should be administered 1-2 times daily by deep intramuscular injection.
Intravenous administration
The drug should be slowly administered drop-wise in 0.9% sodium chloride solution or 5 % glucose solution.
In adults 1 ampoule of 300 mg should be administered 1-2 times daily.

Paediatric population.
The drug should not be used for intramuscular or intravenous administration in children (oral dosage forms are preferable).
The drug should be prescribed for topical use in children aged over 6 years.

Overdose.
In intravenous administration
Symptoms Overdose symptoms are similar to symptoms of severe adverse reactions.

Treatment Treatment requires immediate discontinuation of the drug and conduction of symptomatic therapy. There is no specific antidote. Dialysis is effective.

Topical use

Symptoms
High doses may cause expectoration of large amounts of bronchopulmonary secretion that can result in airway obstruction.
Treatment
Mechanical removal of mucus from the tracheobronchial tree.

Adverse effects.
The following reaction may occur in topical use:

Immune system disorders: hypersensitivity reactions;
Respiratory system disorders: bronchospasm, rhinorrhea;
Gastrointestinal disorders: stomatitis, nausea, vomiting;
Skin disorders: urticaria, rash, pruritus.

The following reaction may occur in parenteral administration:
Immune system disorders: anaphylactic shock, anaphylactic reactions, anaphylactoid reactions, hypersensitivity;
Cardiac and vascular disorders: tachycardia, decreased blood pressure;
Respiratory system disorders: bronchospasm, dyspnea;
Gastrointestinal disorders: nausea, vomiting, abdominal pain, diarrhoea, dyspepsia, heartburn;
Skin disorders: angioneurotic oedema, urticaria, hyperaemia, burning sensation at the injection site, rash, pruritus, in rare cases Stevens-Johnson syndrome and Lyell's syndrome may develop;
Other: facial oedema, headache, tinnitus, haemorrhages, hyperthermia, anaemia, increased prothrombin time.

Shelf life. 2 years.

Storage conditions.
Store below 30°C in the original packaging.
Keep out of the reach of children.

Incompatibility.
Ingamist solution should not come into contact with rubber and metal surfaces.

Nature and contents of container.
Pack of 3 ml amber glass ampoules; a blister of 5 ampoules; a pack of 2 blisters.

Dispensing conditions. Prescription only medicine.

Manufacturer.
"Yuria-Pharm" LLC.

Location of the manufacturer and address of its business activity.
108 Verbovetskij Str., Cherkassy, 18030, Ukraine. Tel: (044) 281-01-01.