Package leaflet: Information for the user

ERYTHROMYCIN 1g

powder for solution for infusion

Erythromycin (as erythromycin lactobionate)

Read all of this leaflet carefully before you start using this medicine because it contains important information for you.

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor or nurse.
- This medicine has been prescribed for you only. Do not pass it on to others. It may harm them, even if their signs of illness are the same as yours.
- If you get any side effects, talk to your doctor or nurse. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet

The name of your medicine is 'Erythromycin 1g, powder for solution for infusion' but will be referred to as 'Erythromycin in this leaflet.

1. What ERYTHROMYCIN is and what it is used for

ERYTHROMYCIN is an antibiotic that contains erythromycin (as erythromycin lactobionate). It is a type of antibiotic called macrolide which acts by preventing the growth and multiplication of bacteria.

ERYTHROMYCIN is used for the treatment of serious infections caused by bacteria in patients adults and children when oral adminitration of erythromycin is not possible or insufficient or in patients in whom the severity of the infection requires high levels of erythromycin or when patients are allergic or hypersensitive to beta-lactams class of antibiotics or when these antibiotics are not appropriate for other reasons.

Once the acute phase of the infection is controlled, your doctor will replace the intravenous erythromycin with an oral form of erythromycin.

ERYTHROMYCIN is used to treat infections such as:

- Respiratory tract infections: pneumonia, whooping cough;
- Ear infections;
- Eye infections (conjunctivitis);
- Skin and soft tissue (such as muscles, blood vessels, tendons, fat) infections;
- Gastrointestinal infections;
- Urogenital infections (relative to infections of the reproductive and urinary organs);
- Lymphogranuloma venerum (a sexually transmitted disease);
- Diphtheria (an upper respiratory tract illness)

2. What you need to know before you use ERYTHROMYCIN

Do not use ERYTHROMYCIN

- if you are allergic (or hypersensitive) to erythromycin;
- if you are allergic (or hypersensitive) to other macrolide antibiotics;
- if you are taking any of the following medicines:
  - Astemizole, terfenadine (used to treat **allergic reactions**);
  - Disopyramide (antiarrhythmic medicine used in the treatment of **ventricular tachycardia**);
  - Cisapride (used to treat **gastroesophageal reflux disease**);
  - Pimozide (used in the treatment of **psychiatric disorders**);
  - Ergotamine or dihydroergotamine (for **migraine**);
  - Lovastatin, simvastatin and atorvastatin (blood **cholesterol** lowering medicines);
  - Antiarrhythmic class Ia and III (used to treat **ventricular arrhythmias**, to prevent paroxysmal **recurrent atrial fibrillation**, to treat **Wolff-Parkinson-White syndrome, to treat ventricular tachycardias, atrial fibrillation and atrial flutter**);
  - Neuroleptics (used to manage **psychosis** (including **delusions, hallucinations**, or **disordered thought**));
  - Tri- and tetracyclic antidepressants (used in the treatment of **depression**);
  - Fluoroquinolones (antibiotics used to treat certain **infections**);
  - Arsenic trioxide (used to treat **cancer**);
  - Methadone (used to manage **opioid dependence**, such as heroin addiction);
  - Budipine (**antiparkinson agent**);
  - **Antifungal** and **anti-malarial** medicines;
- if you have problems with the way your **liver** works. This is because erythromycin is mainly excreted by the liver (see section 3 – "How to use ERYTHROMYCIN");
- if you or someone in your family has a history of heart rhythm disorders (ventricular cardiac arrhythmia or torsades de pointes) or an abnormality of the electrocardiogram (electrical recording of the heart) called "long QT syndrome";
- if you have low level of potassium or magnesium in your blood (hypomagnesaemia or hypokalaemia).

Warnings and precautions

Talk to your doctor, pharmacist or nurse before using ERYTHROMYCIN:

- If you are taking other medicines which are known to cause serious disturbance in heart rhythm;
- If you have heart problem
- Serious allergic reactions can occur, do not use ERYTHROMYCIN if you are allergic or hypersensitive to Erythromycin or other drugs of the macrolides class of antibiotics, talk to your doctor, pharmacist or nurse before using ERYTHROMYCIN.
- if you have myasthenia gravis, erythromycin may aggravate the symptoms which can lead to serious respiratory troubles,

If you are **elderly**, because you have a greater risk of developing a kidney disease. Your doctor will adjust your dose and take into account the way your kidneys work (see section 3 – "How to use ERYTHROMYCIN") It is generally not recommended to combine erythromycin with:

- Alfuzosin (used to treat **benign prostatic hyperplasia**);
- Buspirone (used to treat **generalized anxiety disorder**);
- Cyclosporine and Tacrolimus (used in **organ transplantation to prevent rejection**);
- Colchicine (used in treatment of **gout**);
- Ebastine (**antihistaminic**);
- Tolterodine (used as a treatment for **urinary incontinence**);
- Triazolam (used as a **sedative to treat severe insomnia**).

You will receive this medicine continuously or slowly in order to avoid pain.

Newborn infants and children

Contact your doctor immediately if your child vomits (projectile non-bilious vomiting) and/or if he/she has troubles eating during treatment with this medicine. Your doctor will decide on your child's dose (see section 3 – "How to use ERYTHROMYCIN").

Other medicines and ERYTHROMYCIN

If you are asked to provide a **urine test**, tell your doctor that you are using Erythromycin, as it may interfere with some tests.

Tell your doctor or pharmacist if you are taking, have recently taken or might take any other medicines.

- Hydroxychloroquine or chloroquine (used to treat conditions including rheumatoid arthritis, or to treat or prevent malaria). Taking these medicines at the same time as ERYTHROMYCIN may increase the chance of you getting side effects that affect your heart.

It is generally not recommended to combine erythromycin with:

- Anticoagulants e.g. warfarin and acenocoumarol and rivaroxaban (used to **thin the blood**);
- Zopiclone (induces **sleep**);
- Theophylline (helps **breathing**);
- Sildenafil (used to treat **erectile dysfunction** and **pulmonary arterial hypertension**)
- Some cytostatic medicines and vinblastine (used to treat **cancer**);
- Digoxin (used to treat **heart problems**);
- Carbamazepine (used to treat **epilepsy and neuropathic pain**);
- Alfentanil (**anaesthesia**);
- Bromocriptine (used in **Parkinson disease, hyperprolactinaemia**);
- Cilostazole (used to treat **Intermittent claudication**);
- Methylprednisolone (corticosteroid drug used for its **anti-inflammatory effects**);
- Midazolam (used to induce **anaesthesia** or **moderately severe insomnia**);
- Omeprazole (used to **reduce gastric acid secretion**);
- Valproate (**anticonvulsant** and **mood-stabilizing drug**);
- Cimetidine (inhibits **stomach acid production**);
- Rifampicin (**antibiotic**);
- Phenytoin (used as an **anticonvulsant**);
- Phenobarbital (**anticonvulsive** drug);
- Benzodiazepines (**anxiolytic, anticonvulsant, muscle relaxant, sedative…**);
- Fexofenadine (used to treat **allergic reactions**);
- St. John's Wort (Hypericum perforatum) (**medicinal herb used to treat moderate depression**)

Pregnancy and breast-feeding

If you are pregnant or breast-feeding, think you may be pregnant or are planning to have a baby, ask your doctor for advice before using this medicine.

Erythromycin has been reported to cross the placenta and reach the unborn child.

Erythromycin passes into breast milk.

Your doctor will decide if you should be administered this medicine, only after making sure that the benefits outweigh the potential risks.

Driving and using machines

The occurrence of side effects of ERYTHROMYCIN may affect the ability to drive and use machines.

Experience to date shows that erythromycin has negligible influence on the ability to concentrate and react.

3. How to use ERYTHROMYCIN

Always use this medicine exactly as your doctor or pharmacist has told you. Check with your doctor or pharmacist if you are not sure. This medicine will always be administered to you by your doctor or a healthcare professional. It will be given intravenously (into a vein) over 60 minutes.

Adults and children over 12 years old or weighing > 40 kg

The usual dose is 1 to 2 g per day equivalent to 25 mg/kg/day in divided doses (generally 3-4 single doses).

This may be increased to 4 g per day if your infection is very severe.

It is important that you complete your full course of antibiotics; do not stop receiving your infusion treatment early, even if you feel better.

Children over 1 month to 12 years old or weighing ≤ 40 kg

The usual dose is 15-20 mg/kg of body weight divided over 3-4 single doses.

Your doctor will calculate the exact dose your child will receive taking into account his/her body weight.

The following information is intended for healthcare professionals only

For information on **resistance data** for Erythromycin, please see the technical information on Erythromycin.

Posology

Adults and children over 12 years old or weighing > 40 kg

The usual dose is 1 to 2 g per day equivalent to 25 mg/kg/day in divided doses (generally 3-4 single doses).

Severe infections

Dosage can be increased up to 4 g per day equivalent to 50 mg/kg/day in severe infections.

The maximum daily dose is 4 g.

Children up to 12 years old or weighing ≤ 40 kg

1 months to up to 12 years old: The daily dose for infants and children up to 12 years old for most infections is 15-20 mg of erythromycin/kg of body weight divided over 3-4 single doses. This dose may be doubled depending on the indication.

Term newborn infants (birth to 1 month):

10-15mg/kg/day divided over 3 singles doses

Renal/hepatic impairment

Patients with impaired hepatic function:

In the presence of normal hepatic function, erythromycin is concentrated in the liver and excreted in the bile. Although the effect of hepatic dysfunction on the excretion of erythromycin and its half-life in such patients is not known, caution should be exercised in administering the antibiotic in such cases particularly if patients with acute hepatic insufficiency receive high doses of erythromycin. In that case, monitoring of serum levels and dosage reduction will be required.

Patients with impaired renal function:

The low proportion of renal excretion would suggest that dosage modification in patients with impaired renal function (slight or moderate impaired renal function with a creatinine clearance levels higher than 10ml/min) may not be necessary.

In moderate to severely impaired patients however, toxicity has been reported and dosage adjustment in these cases may be warranted:

- Administration of doses of ≥ 4 g/day may increase the risk for the development of erythromycin-induced hearing loss in elderly patients, particularly those with reduced renal or hepatic function.
- In moderate to severely impaired renal function (with a level of serum creatinine of 2.0 mg/dl, kidney failure with anuria), the maximum daily dose for adolescents over 14 years old and adults (with a body weight over 50 kg) is 2 g Erythromycin per day.
- In patients with acute renal insufficiency (creatinine clearance levels lower than 10ml/min), the erythromycin dose must be reduced to 50% to 75% of the normal dose, to be administered in accordance with the habitual treatment regimen. The maximum daily dose must not exceed 2g.

Erythromycin is not removed by haemodialysis or peritoneal dialysis. For patients who have regular dialysis, an additional dose is therefore not recommended.

Elderly

Use adult dosage with care. Elderly patients, particularly those with reduced renal or hepatic function may be at increased risk for developing erythromycin-induced hearing loss, when erythromycin doses of 4 g/day or higher are given.

Method of administration

Precautions to be taken before handling or administering the medicinal product

For instructions on reconstitution of the medicinal product before administration, see section 6.6.

Erythromycin can be administered in continuous or intermittent perfusion.

The infusion should be administered over 60 minutes as a rapid infusion is more likely to be associated with local irritative effects as well as QT interval prolongation, arrhythmias or hypotension. A longer period of infusion should be used in patients with risk factors or previous evidence of arrhythmias.

Not less than 200 ml of diluent should be used for preparing intermittent I.V. solutions so as to minimise venous irritation

The erythromycin concentration should not exceed 5mg per ml and an erythromycin concentration of 1mg/ml (0.1% solution) is recommended.

Term newborn infants (birth to 1 month)

The usual dose is 10-15 mg/kg divided over 3 single doses.

Your doctor will calculate the exact dose your child will receive taking into account his/her body weight.

Use in patients with severe kidney problems

Your doctor will calculate your exact dose according to the way your kidney work.

Use in elderly patients

Your doctor will carefully decide your dose and take into account the way your kidneys and liver work because you have a greater risk of developing kidney disease.

If you use more ERYTHROMYCIN than you should

If you believe that you or your child has been given too much medicine, contact your doctor. Symptoms of overdose include ototoxicity (damage to the ear), hearing loss, severe nausea, vomiting and diarrhoea.

If you forget to use ERYTHROMYCIN

If you think you may have missed a dose of this medicine, contact your doctor or other healthcare professionals immediately.

If you stop using ERYTHROMYCIN

Do not stop using this medicine until your doctor tells you to.

If you have any further questions on the use of this medicine, ask your doctor, pharmacist or nurse.

4. Possible side effects

Like all medicines, this medicine can cause side effects, although not everybody gets them.

If you develop an allergic reaction, this may result in a rash and swelling of certain parts of your body, including the face and neck, accompanied by difficulty in breathing. **If this happens to you, stop using this medicine and seek urgent medical help immediately.**

Contact a doctor immediately if you experience a serious skin reaction: a red, scaly rash with bumps under the skin and blisters (exanthematous pustulosis). The frequency of this side effect is not known (cannot be estimated from the available data).

The most frequent side effects are anorexia (lack of appetite), retching, vomiting, abdominal pains, nausea, flatulence, discomfort, cramps, soft stools or diarrhoea.

The following side effects have been reported:

Uncommon (may affect up to 1 in 100 people):

- Fungal infections (candidiasis) of the mouth with white coating
- Vaginal inflammation
- Itching of the vulva in women
- Allergic reactions
- Widespread skin rash (urticarial exanthema)
- Skin itchiness
- Redness of the skin with increase of blood flow (hyperaemia)
- Abnormal liver and gallbladder function detected by blood tests
- Pain or irritation at the site of injection
- Swelling and redness along a vein which is extremely tender when touched

Rare (may affect up to 1 in 1.000 people):

- Swelling of certain part of your body including face and neck (allergic oedema/ angioedema, anaphylaxis)
- Symptom of poor appetite (anorexia)
- Epigastric pain radiating to the back with nausea, vomiting, diarrhoea and loss of appetite (pancreatitis)
- Itchiness with jaundice, pale stool and dark urine (cholestasis and cholestatic jaundice)
- Swollen joints
- Fever
- Hives
- Skin eruptions
- Inflammation of the colon with severe diarrhoea

Very rare (may affect up to 1 in 10.000 people):

- Unmasking or worsening of a rare disease associated with muscle weakness (myasthenia gravis)
- Ringing in the ears (tinnitus) and mainly transient loss of hearing
- Inability of the liver to perform normal function
- Inability of the kidney to perform normal function
- Severe skin reactions (Stevens-Johnson syndrome and erythema multiform)
- Skin peeling (toxic epidermal necrolysis)

Unknown (frequency cannot be estimated from the available data):

- Chest pain, feeling unwell
- Abnormal heartbeat rhythms (including palpitations, a faster heartbeat, a life-threatening irregular heartbeat called torsades de pointes or abnormal ECG heart tracing) or heart stopping (cardiac arrest)
- Chest discomfort, difficulty breathing, abnormally fast and superficial breathing, pain in the upper spine
- Dyspnoea (including asthmatic circumstances)
- Visual disturbances, including diplopia and blurred vision
- Psychic disturbances (such as mood swings and impaired judgment)
- Confusion, hallucinations
- Dizziness, sleepiness, vertigo
- Epileptic seizures, convulsions
- Low blood pressure (hypotension)
- Blood disorders affecting the cell components of the blood and usually detected by blood tests
- Headaches

Additional side effects in newborn infants and children

Vomiting (projectile non-bilious vomiting) or having troubles eating and weight loss (infantile hypertrophic pyloric stenosis).

Reporting of side effects

If you get any side effects, talk to your doctor, pharmacist or nurse. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via Yellow Card Scheme Website: www.mhra.gov.uk/yellowcard or search for MHRA Yellow Card in the Google Play or Apple App Store.

By reporting side effects, you can help provide more information on the safety of this medicine.

5. How to store ERYTHROMYCIN

Keep this medicine out of the sight and reach of children.

Do not use this medicine after the expiry date which is stated on the vial and carton after {EXP}. The expiry date refers to the last day of that month.

After reconstitution:

Diluted solutions should be used immediately.

Do not freeze the reconstituted solution.

For the reconstituted solution: Chemical and physical in-use stability has been demonstrated for 24 h in the refrigerator (2 to 8°C).

For the diluted solution: Chemical and physical in-use stability has been demonstrated for 24 h in the refrigerator (2 to 8°C).

From a microbiological point of view, the product should be used immediately.

If not used immediately, in-use storage times and conditions prior to use are the responsibility of the user and would normally not be longer than 24 hours in the refrigerator, unless reconstitution/dilution has taken place in controlled and validated aseptic conditions.

Do not throw away any medicines via wastewater or household waste. Ask your pharmacist how to throw away medicines you no longer use. These measures will help protect the environment.

6. Contents of the pack and other information

What ERYTHROMYCIN contains

The active substance is erythromycin lactobionate.

Each vial contains 1 gram of erythromycin.

There are no other ingredients in this medicine.

What ERYTHROMYCIN looks like and contents of the pack

Before reconstitution, ERYTHROMYCIN is a white to slightly yellow hygroscopic powder for solution for infusion in a glass vial. After reconstitution, the solution is clear and colourless.

ERYTHROMYCIN is available in packs containing 1, 10 or 20 glass vials. Not all pack sizes may be marketed.

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Erythromycin should only be administered intravenously. Intra-arterial injection is strictly contraindicated. It can lead to angiospasm with ischaemia. Intramuscular administration and IV bolus injection are also contraindicated.

Intravenous therapy should be replaced by oral administration after 2-7 days. In the interest of lasting successful treatment, erythromycin should be continued for a further 2-3 days after symptoms have disappeared.

Warnings and precautions

Newborn infants and Children

Contact immediately your doctor if your child vomits and/or if irritability in connection with meals occurs because of the risk of Infantile Hypertrophic Pyloric Stenosis (IHPS) that causes severe projectile non-bilious vomiting. Do not give this medicine to children if the potential benefits are not greater than the risks.

Reconstitution

Each vial is for single use only.

Two steps are required, reconstitution **and** dilution.

1. ***Reconstitution***: For this step, do not use 0.9% sodium chloride solution.
   a. To allow a proper dissolution, gently agitate the vial to loosen powder contents prior to reconstitution.
   b. Prepare an initial solution corresponding to 50 mg/ml of erythromycin base by adding 20 ml of water for injections to the content of the vial of Erythromycin 1 g. When adding the solvent, please make sure that it makes contact with all the walls of the vials (by holding the vial horizontally for example).
   c. Shake abundantly until complete dissolution. The dissolution can be difficult and take a few minutes.

The reconstituted solution can be kept in the refrigerator for 24 hours.

2. ***Dilution***

Only a 0.9% sodium chloride solution or a 5% glucose solution should be used.

- For intermittent infusion: The solution is prepared by mixing the content of the reconstituted vial of Erythromycin 1 g (20 ml) to 200 ml or to 500 ml of one of the dilution solvents, giving a final concentration for the diluted solution of respectively 5 mg/ml or 2 mg/ml.
- For continuous infusion: The solution is prepared by mixing the content of the reconstituted vial of Erythromycin 1 g (20 ml) to 500 ml or to 1000 ml of one of the dilution solvents, giving a final concentration for the diluted solution of respectively 2 mg/ml or 1 mg/ml.

The diluted solution can be kept in the refrigerator for 24 hours. The diluted solution is administered without addition any other substance whatsoever.

In children, adjust the quantity of initial solution for dilution and the volume of infusion to the dosage chosen according to the child's weight.

After reconstitution

Diluted solutions should be used immediately.

Any unused product or waste material should be disposed of in accordance with local requirements.

Incompatibilities

This medicinal product must not be mixed with other medicinal products except those used for reconstitution.

Erythromycin lactobionate in solution does not blend, mainly because of the pH shifts, with β-lactam antibiotics, aminoglycosides, tetracyclines, Chloramphenicol, Colistin, Aminophylline, barbiturates, Diphenylhydantoin, Heparin, Phenothiazine, riboflavin (vitamin B2), vitamin B6 and vitamin C. Therefore, Erythromycinshould not be mixed with the named drugs in an infusion solution.

The addition of other solutions, which alter the range from pH 6-8, reduces the stability of erythromycin lactobionate.

Attention: Sodium chloride solutions or other solutions which contain inorganic salts should not be used to prepare the stock solution (see section 6.6 "Instructions for Use"), as it may cause precipitation.

PANPHARMA

14.02.2022

MOCK-UP TYPE

- [ ] box
- [ ] overwrap
- [x] leaflet
- [ ] blisters
- [ ] label
- [ ] box label
- [ ] bag
- [ ] other:

PRODUCT	*Erythromycine*
Country	*UK*
Dimensions	*230 × 510*
ADC code	*2022-04-04-LF*
Visa	*RTo*

PANTONES

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