Package leaflet: Information for the user

Vancomycin 500 mg, powder for concentrate for solution for infusion
Vancomycin 1000 mg, powder for concentrate for solution for infusion

Vancomycin

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 pharmacist.
- If you get any side effects, talk to your doctor or pharmacist. This includes any possible side effects not listed in this leaflet. See section 4.

What is in this leaflet:

1. What Vancomycin is and what it is used for

Vancomycin is an antibiotic that belongs to a group of antibiotics called “glycopeptides”. Vancomycin works by eliminating certain bacteria that cause infections.
Vancomycin powder is made into a solution for infusion.

Vancomycin is used in in all age groups by infusion for the treatment of the following serious infections:
- Infections of the skin and tissues below the skin.
- Infections of bone and joints.
- An infection of the lungs called "pneumonia".
- Infection of the inside lining of the heart (endocarditis) and to prevent endocarditis in patients at risk when undergoing major surgical procedures
- Infection in central nervous system.
- Infection in the blood linked to the infections listed above.

2. What you need to know before you use Vancomycin

Do not use Vancomycin

- if you are allergic to vancomycin or any of the other ingredients of this medicine (listed in section 6).

Warnings and precautions

Talk to your doctor or hospital pharmacist or nurse before using Vancomycin if:
- You suffered a previous allergic reaction to teicoplanin because this could mean you are also allergic to vancomycin.
- You have a hearing disorder, especially if you are elderly (you may need hearing tests during treatment).
- You have kidney disorder (you will need to have your blood and kidneys tested during treatment).
- You are receiving vancomycin by infusion for the treatment of the diarrhoea associated to Clostridium difficile infection instead of orally.

Talk to your doctor or hospital pharmacist or nurse during treatment with Vancomycin if:
- You are receiving vancomycin for a long time (you may need to have your blood, hepatic and

kidneys tested during treatment).
- You develop any skin reaction during the treatment.

You develop severe or prolonged diarrhoea during or after using vancomycin, consult your doctor immediately. This may be a sign of bowel inflammation (pseudomembranous colitis) which can occur following treatment with antibiotics.

Children
Vancomycin will be used with particular care in premature infants and young infants, because their kidneys are not fully developed and they may accumulate vancomycin in the blood. This age group may need blood tests for controlling vancomycin levels in blood.
Concomitant administration of vancomycin and anaesthetic agents has been associated with skin redness (erythema) and allergic reactions in children. Similarly, concomitant use with other medicines such as aminoglycoside antibiotics, nonsteroidal anti-inflammatory agents (NSAIDs, e.g., ibuprofen) or amphotericin B (medicine for fungal infection) can increase the risk of kidney damage and therefore more frequent blood and renal test may be necessary.

Other medicines and Vancomycin

Tell your doctor or pharmacist if you are taking or have recently taken or might take any other medicines.
Medicines potentially harmful to the kidneys (e. g. aminoglycoside antibiotics, iodine contrast agents, platinum-based chemotherapy agents, methotrexate at high doses, and some antiviral drugs such as pentamidine, foscarnet, aciclovir, ganciclovir, famciclovir, valaciclovir, valganciclovir, ciclosporin or tacrolimus). If given at the same time as vancomycin, this harmful effect can be increased. In such cases, a careful and regular control of the kidney function is necessary.
Medicines potentially harmful to hearing (e. g. aminoglycosides, platinum-based chemotherapy agents and some diuretics). If given at the same time as vancomycin, this harmful effect can be increased. In such cases, a careful and regular control of the hearing function is necessary.
Anaesthetics: The use of anaesthetics increases the risk of getting certain side effects of vancomycin like drop of blood pressure, redness of the skin, nettle rash, decreased heart function and itching.
Muscle relaxants (e.g. succinylcholine). If given at the same time as vancomycin, the effect of the muscle relaxant can be intensified or prolonged.
Medicine that prevents clotting of the blood (e. g. warfarin). If given at the same time as vancomycin, the effect of warfarin can be increased

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 or pharmacist for advice before taking this medicine.

Pregnancy
If you are pregnant, your doctor should only give you vancomycin if clearly necessary and after careful consideration of benefits and risks. Vancomycin may affect the foetus ears and kidneys.

Breast feeding
Vancomycin passes into breast milk and may affect the baby. Your doctor should only give you vancomycin if clearly necessary and after careful consideration of benefits and risks. If you are given vancomycin you should stop breastfeeding.

Driving and using machines

Vancomycin has no or negligible influence on the ability to drive and use machines.

3. How to use Vancomycin

You will be given Vancomycin by medical staff while you are in hospital. Your doctor will decide how much of this medicine you should receive each day and how long the treatment will last.

Dosage:
The dose given to you will depend on:
- your age,
- your weight,
- the infection you have,
- how well your kidneys are working,
- your hearing ability,
- any other medicines you may be taking.

Intravenous administration

Adults and adolescents (from 12 years and older)
The dosage will be calculated according to your body weight. The usual infusion dose is 15 to 20 mg for each kg of body weight. It is usually given every 8 to 12 hours. In some cases, your doctor may decide to give an initial dose of up to 30 mg for each kg of body weight. The maximum daily dose should not exceed 2 g.

Use in children
Children aged from one month to less than 12 years of age
The dosage will be calculated according to your body weight. The usual infusion dose is 10 to 15 mg for each kg of body weight. It is usually given every 6 hours.

Preterm and term newborn infants (from 0 to 27 days)
The dosage will be calculated according to post-menstrual age (time elapsed between the first day of the last menstrual period and birth (gestational age) plus the time elapsed after birth (post-natal age).

Other populations

The elderly, pregnant women and patients with a kidney disorder, including those on dialysis, may need a different dose.

Method of administration
Intravenous infusion means that the medicinal product flows from an infusion bottle or bag through a tube to one of your blood vessels and into your body. Your doctor, or nurse, will always give vancomycin into your blood and not in the muscle.
Vancomycin will be given into your vein for at least 60 minutes.

Duration of treatment

The length of treatment depends on the infection you have and may last a number of weeks.

The duration of the therapy may be different depending on the individual response to treatment for every patient.

During the treatment, you might have blood tests, be asked to provide urine samples and possibly have hearing tests to look for signs of possible side effects.

If the administration of Vancomycin has been forgotten

A double dose must not be given to make up for a forgotten dose. A forgotten dose should only be given before the next regular dose if the time span between the administrations is still long enough.

If the treatment with Vancomycin is interrupted or untimely discontinued

Low dosage, irregular administration or premature therapy discontinuation can compromise the outcome of the therapy or lead to relapses, whose therapy is more difficult. Please follow the instructions of your doctor.

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

4. Possible side effects

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

Vancomycin can cause allergic reactions, although serious allergic reactions (anaphylactic shock) are rare. Tell your doctor immediately if you get any sudden wheeziness, difficulty in breathing, redness on the upper part of the body, rash or itching.

Common side effects (may affect up to 1 in 10 people):
- Fall in blood pressure
- Breathlessness, noisy breathing (a high pitched sound resulting from obstructed air flow in the upper airway)
- Rash and inflammation of the lining of the mouth, itching, itching rash, hives
- Kidney problems which may be detected primarily by blood tests
- Redness of upper body and face, inflammation of a vein

Uncommon side effects (may affect up to 1 in 100 people):
- Temporary or permanent loss of hearing.

Rare side effects (may affect up to 1 in 1,000 people):
- Decrease in white blood cells, red blood cells and platelets (blood cells responsible for blood clotting)
- Increase in some of the white cells in the blood.
- Loss of balance, ringing in your ears, dizziness
- Blood vessel inflammation
- Nausea (feeling sick)
- Inflammation of the kidneys and kidney failure
- Pain in the chest and back muscles
- Fever, chills

Very rare side effects (may affect up to 1 in 10,000 people):
- Sudden onset of severe allergic skin reaction with skin flaking blistering or peeling skin. This may be associated with a high fever and joint pains
- Cardiac arrest
- Inflammation of the bowel which causes abdominal pain and diarrhoea, which may contain blood.

Not known (frequency cannot be estimated from the available data)
- Being sick (throwing up), diarrhoea
- Confusion, drowsiness, lack of energy, swelling, fluid retention, decreased urine
- Rash with swelling or pain behind the ears, in the neck, groin, under the chin and armpits (swollen lymph nodes), abnormal blood and liver function tests
- Rash with blisters and fever.

If you get any side effects, talk to your doctor or pharmacist or nurse. This includes any side effects not listed in this leaflet.

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

HPRA
Pharmacovigilance
Earlsfort Terrace
IRL - Dublin 2

Tel: +353 1 6764971
Fax: +353 1 6762517
Website: www.hpra.ie
e-mail: medsafety@hpra.ie

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

5. How to store Vancomycin

Keep this medicine out of the sight and reach of children.
Do not store above 25°C.
The infusion concentrate should be stored at 2-8°C.

Do not use this medicine if you notice particulate matter or a discoloration of the solution for infusion.

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

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 Vancomycin contains

The active substance is vancomycin hydrochloride. Each vial contains vancomycin hydrochloride corresponding to 500 mg vancomycin (equivalent to not less than 525 000 IU) as vancomycin hydrochloride
Each vial contains vancomycin hydrochloride corresponding to 1000 mg vancomycin (equivalent to not less than 1 050 000 IU) as vancomycin hydrochloride

The other excipients are sodium hydroxide, hydrochloric acid for pH adjustment.

What Vancomycin looks like and contents of the pack

This medicinal product is presented as a white or almost white powder for concentrate for solution for infusion.
Vancomycin is available in package with 1 glass vial with a rubber stopper and a flip-off cap.

Marketing Authorisation Holder and Manufacturer:

Marketing authorisation holder:
Generics UK Limited
Station Close, Potters Bar
Hertfordshire EN6 1TL
United Kingdom

Manufacturer(s):
Mylan SAS,
117 Allée des Parcs,
69800 Saint-Priest,
France

Wessling Hungary Kft.,
Fóti út 56.,
1047 Budapest,

Hungary

This medicinal product is authorised in the Member States of the EEA under the following names:

Austria	Vancomycin 500mg Pulver für ein Konzentrat zur Herstellung einer Infusionslösung Vancomycin 1000 mg Pulver für ein Konzentrat zur Herstellung einer Infusionslösung
Belgium	Vancomycin 500mg, poeder voor concentraat voor oplossing voor infusie Vancomycin 1000 mg, poeder voor concentraat voor oplossing voor infusie
Denmark	Vancomycin 500mg pulver til koncentrat til infusionsvæske, opløsning Vancomycin 1000 mg pulver til koncentrat til infusionsvæske, opløsning
Finland	Vancomycin 500mg kuiva-aine välikonsentraatiksi infuusionestettä varten, liuos Vancomycin 1000 mg kuiva-aine välikonsentraatiksi infuusionestettä varten, liuos
France	Vancomycin 500mg poudre pour solution à diluer pour solution pour perfusion Vancomycin 1000 mg poudre pour solution à diluer pour solution pour perfusion
Germany	Vancomycin 500mg Pulver für ein Konzentrat zur Herstellung einer Infusionslösung Vancomycin 1000 mg Pulver für ein Konzentrat zur Herstellung einer Infusionslösung
Greece	Vancomycin 500mg Κόνις για πυκνό διάλυμα για παρασκευή Vancomycin 1000mg Κόνις για πυκνό διάλυμα για παρασκευή
Ireland	Vancomycin 500mg powder for concentrate for solution for infusion Vancomycin 1000mg powder for concentrate for solution for infusion
Italy	Vancomicina FarmaPlus
Latvia	Vancomycin 500mg pulveris infūziju šķīduma koncentrāta pagatavošanai Vancomycin 1000mg pulveris infūziju šķīduma koncentrāta pagatavošanai
Lithuania	Vancomycin 500mg milteliai infuzinio tirpalo koncentratui Vancomycin 1000mg milteliai infuzinio tirpalo koncentratui
Norway	Vancomycin 500mg pulver til konsentrat til infusjonsvæske, oppløsning Vancomycin 1000mg pulver til konsentrat til infusjonsvæske, oppløsning
Poland	Vancomycin Vancomycin
Portugal	Vancomycin 500mg pó para concentrado para solução para perfusão Vancomycin 1000mg pó pó para concentrado para solução para perfusão
Romania	Vancomicina FarmaPlus 500mg pulbere pentru concentrat pentru solutie

	perfuzabila Vancomicina FarmaPlus 1000mg pulbere pentru concentrat pentru solutie perfuzabila
Slovakia	Vancomycin 500mg prášok na infúzny koncentrát Vancomycin FarmaPlus 1000mg prášok na infúzny koncentrát
Slovenia	Vankomicin FarmaPlus 500mg prašek za koncentrat za raztopino za infundiranje Vankomicin FarmaPlus 1000mg prašek za koncentrat za raztopino za infundiranje
Spain	Vancomycin 500mg Polvo para concentrado para solucion para perfusion Vancomycin 1000mg Polvo para concentrado para solucion para perfusion
Sweden	Vancomycin 500mg pulver till koncentrat till infusionsvätska, lösning Vancomycin 1000 mg pulver till koncentrat till infusionsvätska, lösning
United Kingdom	Vancomycin 500mg Powder for concentrate for solution for infusion Vancomycin 1000 mg Powder for concentrate for solution for infusion

This leaflet was last revised in: February 2018

Advice/medical education:
Antibiotics are used to cure bacterial infections. They are ineffective against viral infections.
If your doctor has prescribed antibiotics, you need them precisely for your current illness.
Despite antibiotics, some bacteria may survive or grow. This phenomenon is called resistance: some antibiotic treatments become ineffective. Misuse of antibiotics increases resistance. You may even help bacteria become resistant and therefore delay your cure or decrease antibiotic efficacy if you do not respect appropriate:
- dosage,
- schedules,
- duration of treatment.

Consequently, to preserve the efficacy of this drug:
1 - Use antibiotics only when prescribed.
2 - Strictly follow the prescription.
3 - Do not re-use an antibiotic without medical prescription, even if you want to treat a similar illness.
4 - Never give your antibiotic to another person; maybe it is not adapted to her/his illness.
5 - After completion of treatment, return all unused drugs to your chemist's shop to ensure they will be disposed of correctly.

The following information is intended for medical or healthcare professionals only:
Vancomycin may be diluted with sterile water, 9 mg/ml sodium chloride or 50 mg/ml glucose. Vancomycin solutions are not compatible with solutions of betalactam antibiotics. The risk of precipitation increases with higher concentrations of vancomycin. To prevent precipitation, intravenous cannulae and catheters should be flushed with saline between administration of Vancomycin and these antibiotics. Vancomycin solutions must only be diluted to concentrations of 5 mg/ml or less.

Vancomycin is not licensed for administration as intravitreal injection. Precipitation has been observed following intravitreal injection of vancomycin and ceftazidim using separate syringes and needles for the treatment of endophthalmitis. The precipitate in the vitreous body dissolved completely but slowly over a period of 2 months, during which visual acuity also improved

The powder must be reconstituted and the resulting concentrate must then be diluted further prior to use.

Preparation of the infusion concentrate
Dissolve the contents of a 500 mg vancomycin vial in 10 ml of sterile water.
Dissolve the contents of a 1000 mg vancomycin vial in 20 ml of sterile water.

One ml of reconstituted solution contains 50 mg of vancomycin.
pH = 2.5 – 4.5.

To prevent precipitation due to the low pH of vancomycin hydrochloride in solution, all intravenous cannulae and catheters should be flushed with saline.

Appearance of the infusion concentrate
Clear, colorless solution free from particles.
For storage conditions of the reconstituted medicinal product, see sections 5

Preparation of the solution for infusion
Vancomycin may be diluted with sterile water, 9 mg/ml sodium chloride or 50 mg/ml glucose.

Vial containing 500 mg vancomycin:
Dilute 10 ml of the infusion concentrate with 90 ml of 9 mg/ml sodium chloride or 50 mg/ml glucose, and administer as intravenous infusion. The solution for infusion contains 5 mg vancomycin/ml.

Vial containing 1000 mg vancomycin:
Dilute 20 ml of the infusion concentrate with 180 ml of 9 mg/ml sodium chloride or 50 mg/ml glucose, and administer as intravenous infusion. The solution for infusion contains 5 mg vancomycin/ml.

Appearance of solution for infusion
The solution is to be inspected visually for particulate matter and discoloration prior to administration. The solution should only be used is the solution is clear and free from particles.

The concentration of vancomycin in Solution for infusion should not exceed 5 mg/ml.
The desired dose should be administered slowly by intravenous infusion at a rate of no more than 10 mg/minute, for at least 60 minutes or even longer.

For storage conditions of the diluted medicinal product, see sections 5

Disposal
Vials are for single use only. Unused product must be discarded.

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

Incompatibilities
Vancomycin solutions are not compatible with solutions of penicillins or cephalosporins (betalactam antibiotics). The risk of precipitation increases with higher concentrations of vancomycin. To prevent precipitation, intravenous cannulae and catheters should be flushed with saline between administration of Vancomycin and these antibiotics. Vancomycin solutions must only be diluted to concentrations of 5 mg/ml or less.

Stability
Shelf life for reconstituted concentrate for solution for infusion:
Chemical and physical in-use stability has been demonstrated for 24 hours stored at 2-8°C.

Shelf life for prepared solution for infusion:
Chemical and physical in-use stability has been demonstrated for 12 hours stored at 25°C.

From a microbiological point of view, the product should be used immediately. If not used immediately, the total in-use storage times and conditions prior to use are the responsibility of the user and would normally not be longer than 24 hours at 2-8°C, unless reconstitution/dilution has taken place in controlled and validated aseptic conditions

Administration

Allergic shock (anaphylactic/anaphylactoid reactions) may occur during and immediately after rapid infusion of Vancomycin.
Rapid administration (i.e., over several minutes) can cause excessive hypotension (including shock, and, rarely, cardiac arrest), histamine-like response and maculopapular or erythematous rash ("red man's syndrome" or "red neck syndrome"). In case of serious acute hypersensitivity reactions (e.g. fatal anaphylactic reaction), treatment with vancomycin should be discontinued immediately and the usual emergency measures have to be started.
Patients requiring fluid restriction may be treated with concentrations of up to 10 mg/ml. However, such concentrations involve a greater risk of infusion-related complications. **The rate of infusion should under no circumstances exceed 10 mg/min.**

Concomitant use of Vancomycin and anaesthetics increases the risk of flushing of the upper body and allergic shock. To reduce the risk of such reactions, Vancomycin should be administered for a period of 60 minutes prior to the anaesthetic.