GlaxoSmithKline (logo)

Zovirax I.V. 250 mg
Zovirax I.V. 500 mg
aciclovir

The following information is intended for medical or healthcare professionals only:

DOSAGE AND ADMINISTRATION INFORMATION ONLY
Please refer to the Summary of Product Characteristics (SPC) for complete prescribing information.

Qualitative and Quantitative Composition

250 mg aciclovir or 500 mg aciclovir in each vial

Excipients with known effect:
Sodium hydroxide

Pharmaceutical Form

Intravenous injection

Therapeutic indications

Zovirax I.V. is indicated for the treatment of *Herpes simplex* infections in immunocompromised patients and severe initial genital herpes in the non-immunocompromised.
Zovirax I.V. is indicated for the prophylaxis of *Herpes simplex* infections in immunocompromised patients.
Zovirax I.V. is indicated for the treatment of *Varicella zoster* infections.
Zovirax I.V. is indicated for the treatment of herpes encephalitis.
Zovirax I.V. is indicated for the treatment of *Herpes simplex* infections in the neonate and infant up to 3 months of age.

Posology and method of administration

Route of administration: Slow intravenous infusion over 1 hour.

A course of treatment with Zovirax I.V. usually lasts 5 days, but this may be adjusted according to the patient's condition and response to therapy. Treatment for herpes encephalitis usually lasts 10 days. Treatment for neonatal herpes usually lasts 14 days for mucocutaneous (skin-eye-mouth) infections and 21 days for disseminated or central nervous system disease.

The duration of prophylactic administration of Zovirax I.V. is determined by the duration of the period at risk.

Dosage in adults:

Patients with *Herpes simplex* (except herpes encephalitis) or *Varicella zoster* infections should be given Zovirax I.V. in doses of 5 mg/kg body weight every 8 hours provided renal function is not impaired (see Dosage in renal impairment).

Immunocompromised patients with *Varicella zoster* infections or patients with herpes encephalitis should be given Zovirax I.V. in doses of 10 mg/kg body weight every 8 hours provided renal function is not impaired (see Dosage in renal impairment).

In obese patients dosed with intravenous aciclovir based on their actual body weight, higher plasma concentrations may be obtained (see SPC section 5.2 Pharmacokinetic properties). Consideration

should therefore be given to dosage reduction in obese patients and especially in those with renal impairment or the elderly.

Dosage in children: The dose of Zovirax I.V. for children aged between 3 months and 12 years is calculated on the basis of body surface area.

Children 3 months of age or older with *Herpes simplex* (except herpes encephalitis) or *Varicella zoster* infections should be given Zovirax I.V. in doses of 250 mg per square metre of body surface area every 8 hours if renal function is not impaired.

In immunocompromised children with *Varicella zoster* infections or children with herpes encephalitis, Zovirax I.V. should be given in doses of 500 mg per square metre body surface area every 8 hours if renal function is not impaired.

The dosage of Zovirax I.V. in neonates and infants up to 3 months of age is calculated on the basis of body weight.

The recommended regimen for infants treated for known or suspected neonatal herpes is aciclovir 20 mg/kg body weight IV every 8 hours for 21 days for disseminated and CNS disease, or for 14 days for disease limited to the skin and mucous membranes.

Infants and children with impaired renal function require an appropriately modified dose, according to the degree of impairment (see *Dosage in renal impairment*).

Dosage in the elderly:
The possibility of renal impairment in the elderly must be considered and dosage should be adjusted accordingly (see *Dosage in renal impairment* below).

Adequate hydration should be maintained.

Dosage in renal impairment:

Caution is advised when administering Zovirax I.V. to patients with impaired renal function. Adequate hydration should be maintained.

Dosage adjustment for patients with renal impairment is based on creatinine clearance, in units of ml/min for adults and adolescents and in units of ml/min/1.73m^2 for infants and children less than 13 years of age. The following adjustments in dosage are suggested:

Dosage adjustments in adults and adolescents:

Creatinine Clearance	*Dosage*
25 to 50 ml/min	The dose recommended above (5 or 10 mg/kg body weight) should be given every 12 hours.
10 to 25 ml/min	The dose recommended above (5 or 10 mg/kg body weight) should be given every 24 hours.
0(anuric) to 10 ml/min	In patients receiving continuous ambulatory peritoneal dialysis (CAPD) the dose recommended above (5 or 10 mg/kg body weight) should be halved and administered every 24 hours. In patients receiving haemodialysis the dose recommended above (5 or 10 mg/kg body weight) should be halved and administered every 24 hours and after dialysis.

Dosage adjustments in infants and children:

Creatinine Clearance	*Dosage*
25 to 50 ml/min/1.73m2	The dose recommended above (250 or 500 mg/m2 body surface area or 20 mg/kg body weight) should be given every 12 hours.

10 to 25 ml/min/1.73m2	The dose recommended above (250 or 500 mg/m2 body surface area or 20 mg/kg body weight) should be given every 24 hours.
0(anuric) to 10 ml/min/1.73m2	In patients receiving continuous ambulatory peritoneal dialysis (CAPD) the dose recommended above (250 or 500 mg/m2 body surface area or 20 mg/kg body weight) should be halved and administered every 24 hours. In patients receiving haemodialysis the dose recommended above (250 or 500 mg/m2 body surface area or 20 mg/kg body weight) should be halved and administered every 24 hours and after dialysis

Contraindications

Hypersensitivity to aciclovir or valaciclovir or to any of the excipients.

Special warnings and precautions for use

Use in patients with renal impairment and in elderly patients:

Adequate hydration should be maintained in patients given i.v. or high oral doses of aciclovir. Intravenous doses should be given by infusion over one hour to avoid precipitation of aciclovir in the kidney; rapid or bolus injection should be avoided.
The risk of renal impairment is increased by use with other nephrotoxic drugs. Care is required if administering i.v. aciclovir with other nephrotoxic drugs.

Aciclovir is eliminated by renal clearance, therefore the dose must be adjusted in patients with renal impairment (see SPC section 4.2 Posology and method of administration). Elderly patients are likely to have reduced renal function and therefore the need for dose adjustment must be considered in this group of patients. Both elderly patients and patients with renal impairment are at increased risk of developing neurological side effects and should be closely monitored for evidence of these effects. In the reported cases, these reactions were generally reversible on discontinuation of treatment (see SPC section 4.8 Undesirable effects). Prolonged or repeated courses of aciclovir in severely immune-compromised individuals may result in the selection of virus strains with reduced sensitivity, which may not respond to continued aciclovir treatment (see SPC section 5.1).

In patients receiving Zovirax I.V. at higher doses (e.g. for herpes encephalitis) specific care regarding renal function should be taken, particularly when patients are dehydrated or have any renal impairment.

Reconstituted Zovirax I.V. has a pH of approximately 11 and should not be administered by mouth. Product contains sodium (26mg, approx. 1,13mmol). To be taken into consideration by patients on a controlled sodium diet.

250mg: This medicinal product contains 28.03 mg sodium per vial, equivalent to 1.4% of the WHO recommended maximum daily intake of 2 g sodium for an adult.
500mg: This medicinal product contains 56.06 mg sodium per vial, equivalent to 2.8% of the WHO recommended maximum daily intake of 2 g sodium for an adult.

Zovirax I.V. contains no antimicrobial preservative. Reconstitution and dilution should therefore be carried out under full aseptic conditions immediately before use and any unused solution discarded. The reconstituted or diluted solutions should not be refrigerated.

Interaction with other medicinal products and other forms of interaction

Aciclovir is eliminated primarily unchanged in the urine via active renal tubular secretion. Any drugs administered concurrently that compete with this mechanism may increase aciclovir plasma concentrations. Probenecid and cimetidine increase the AUC of aciclovir by this mechanism and reduce aciclovir renal clearance. However no dosage adjustment is necessary because of the wide therapeutic index of aciclovir.

In patients receiving intravenous Zovirax caution is required during concurrent administration with drugs which compete with aciclovir for elimination, because of the potential for increased plasma levels of one or both drugs or their metabolites. Increases in plasma AUCs of aciclovir and of the inactive metabolite of mycophenolate mofetil, an immunosuppressant agent used in transplant patients, have been shown when the drugs are coadministered.

If lithium is administered concurrently with high dose aciclovir IV, the lithium serum concentration should be closely monitored because of the risk of lithium toxicity.

Care is also required (with monitoring for changes in renal function) if administering intravenous Zovirax with drugs which affect other aspects of renal physiology (e.g. ciclosporin, tacrolimus).

An experimental study on five male subjects indicates that concomitant therapy with aciclovir increases AUC of totally administered theophylline with approximately 50%. It is recommended to measure plasma concentrations during concomitant therapy with aciclovir.

Overdose

Overdosage of intravenenous aciclovir has resulted in elevations of serum creatinine, blood urea nitrogen and subsequent renal failure. Neurological effects including confusion, hallucinations, agitation, seizures and coma have been described in association with overdosage. Patients should be observed closely for signs of toxicity. Haemodialysis significantly enhances the removal of aciclovir from the blood and may, therefore, be considered an option in the management of overdose of this drug.

List of excipients

Sodium hydroxide (used to adjust pH)

Incompatibilities

The reconstituted concentrate and diluted solution for infusion must not be mixed with other medicinal products except those mentioned in Use and Handling.

Nature and contents of container

Type I glass vials closed with butyl or bromobutyl rubber stoppers secured by aluminium collars.
17 ml-nominal capacity of vial containing 250 mg aciclovir.
25 ml-nominal capacity of vial containing 500 mg aciclovir.

Instructions for use/handling

Reconstitution: Zovirax I.V. should be reconstituted using the following volumes of either Water for Injections BP or Sodium Chloride Intravenous Injection BP (0.9% w/v) to provide a solution containing 25 mg aciclovir per ml:

Formulation	*Volume of fluid for reconstitution*
250 mg vial	10 ml
500 mg vial	20 ml

From the calculated dose, determine the appropriate number and strength of vials to be used. To reconstitute each vial add the recommended volume of infusion fluid and shake gently until the contents of the vial have dissolved completely.

Administration: The required dose of Zovirax I.V. should be administered by slow intravenous infusion over a one-hour period.

After reconstitution Zovirax I.V. may be administered by a controlled-rate infusion pump.

Alternatively, the reconstituted solution may be further diluted to give an aciclovir concentration of not greater than 5 mg/ml (0.5% w/v) for administration by infusion:

Add the required volume of reconstituted solution to the chosen infusion solution, as recommended below, and shake well to ensure adequate mixing occurs.

For children and neonates, where it is advisable to keep the volume of infusion fluid to a minimum, it is recommended that dilution is on the basis of 4 ml reconstituted solution (100 mg aciclovir) added to 20 ml of infusion fluid.

For adults, it is recommended that infusion bags containing 100 ml of infusion fluid are used, even when this would give an aciclovir concentration substantially below 0.5% w/v. Thus one 100 ml infusion bag may be used for any dose between 250 mg and 500 mg aciclovir (10 and 20 ml of reconstituted solution) but a second bag must be used for doses between 500 mg and 1000 mg.

When diluted in accordance with the recommended schedules, Zovirax I.V. is known to be compatible with the following infusion fluids and stable for up to 12 hours at room temperature (15°C to 25°C):

Sodium Chloride Intravenous Infusion BP (0.45% and 0.9% w/v)

Sodium Chloride (0.18% w/v) and Glucose (4% w/v) Intravenous Infusion BP

Sodium Chloride (0.45% w/v) and Glucose (2.5% w/v) Intravenous Infusion BP

Compound Sodium Lactate Intravenous Infusion BP (Hartmann's Solution).

Zovirax I.V. when diluted in accordance with the above schedule will give an aciclovir concentration not greater than 0.5% w/v.

Since no antimicrobial preservative is included, reconstitution and dilution must be carried out under full aseptic conditions, immediately before use, and any unused solution discarded.

Should any visible turbidity or crystallisation appear in the solution before or during infusion, the preparation should be discarded.

Marketing Authorisation Holder

The Wellcome Foundation Ltd, 79 New Oxford Street, London, WC1A 1DG, United Kingdom

Marketing Authorisation Number

PL 00003/0159

Information for the Healthcare Professional Leaflet date: October 2024

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Package leaflet: Information for the user

Zovirax I.V. 250 mg and 500 mg
aciclovir

Read all of this leaflet carefully before you start having 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.
- 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 pharmacist. This includes any possible side effects not listed in this leaflet. See section 4.

In this leaflet:

1 What Zovirax is and what it is used for

Zovirax I.V. (called 'Zovirax' in this leaflet) contains a medicine called aciclovir. This belongs to a group of medicines called antivirals. It works by killing or stopping the growth of viruses.

Zovirax can be used to:
- treat chickenpox
- treat severe cases of genital herpes
- treat and stop cold sores and genital herpes in people whose immune systems work less well, which means their bodies are less able to fight infections
- treat serious virus infections in children up to 3 months of age. This can rarely be caused by the virus responsible for cold sore infection and genital herpes.
- treat inflammation of the brain. This can rarely be caused by the virus responsible for cold sore infection and genital herpes.

2 What you need to know before you have Zovirax

Do not have Zovirax:
- if you are allergic to aciclovir or valaciclovir or any of the other ingredients of this medicine (listed in Section 6).

Do not take Zovirax if the above applies to you. If you are not sure, talk to your doctor or pharmacist before having Zovirax.

Warnings and precautions
Talk to your doctor or pharmacist before having Zovirax if:
- you have kidney problems
- you are over 65 years of age.

If you are not sure if the above apply to you, talk to your doctor or pharmacist before taking Zovirax.
It is important that you drink plenty of water while taking Zovirax

Other medicines and Zovirax
Tell your doctor or pharmacist if you are taking, have recently taken or might take any other medicines. This includes medicines obtained without a prescription, including herbal medicines.

In particular tell your doctor or pharmacist if you are taking any of the following medicines:
- probenecid, used to treat gout
- cimetidine, used to treat stomach ulcers
- tacrolimus, ciclosporin or mycophenolate mofetil, used to stop your body rejecting transplanted organs.

Pregnancy, breast-feeding and fertility
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.

Zovirax contains
Zovirax 250mg: This medicine contains 28.03 mg sodium (main component of cooking/table salt) in each vial. This is equivalent to 1.4% of the recommended maximum daily dietary intake of sodium for an adult.

Zovirax 500mg: This medicine contains 56.06 mg sodium (main component of cooking/table salt) in each vial. This is equivalent to 2.8% of the recommended maximum daily dietary intake of sodium for an adult.

To be taken into consideration by patients on a controlled sodium diet.

3 How to have Zovirax

How your medicine is given
You will never be expected to give yourself this medicine. It will always be given to you by a person who is trained to do so.

Before the medicine is given to you it will be diluted.

Zovirax will be given to you as a continuous infusion into your vein. This is where the drug is slowly given to you over a period of time.

The dose you will be given, the frequency and the duration of the dose will depend on:
- the type of infection you have
- your weight
- your age.

Your doctor may adjust the dose of Zovirax if:
- you have kidney problems. If you have kidney problems, it is important you receive plenty of fluids while you are being treated with Zovirax.

Talk to your doctor before having Zovirax if any of the above apply.

If you are given too much Zovirax
If you think you have been given too much Zovirax, talk to your doctor or nurse straight away.

If you have been given too much Zovirax you may:
- feel confused or agitated
- have hallucinations (seeing or hearing things that aren't there)
- have fits
- become unconscious (coma).

4 Possible side effects
Like all medicines, this medicine can cause side effects, although not everybody gets them. The following side effects may happen with this medicine:

Allergic reactions (may affect up to 1 in 10,000 people)
If you have an allergic reaction, **stop taking Zovirax and see a doctor straight away**. The signs may include:
- rash, itching or hives on your skin
- swelling of your face, lips, tongue or other parts of your body
- shortness of breath, wheezing or trouble breathing
- unexplained fever (high temperature) and feeling faint, especially when standing up.

Other side effects include:

Common (may affect up to 1 in 10 people)
- feeling or being sick
- itchy, hive-like rash
- skin reaction after exposure to light (photosensitivity)
- itching
- swelling, redness and tenderness at the site of injection.
- Increase in the liver enzymes.

Uncommon (may affect up to 1 in 100 people)
- reduced numbers of red blood cells (anaemia)
- reduced numbers of white blood cells (leukopenia)
- reduced numbers of blood platelets (cells that help the blood to clot) (thrombocytopenia).

Very rare (may affect up to 1 in 10,000 people)
- headache or feeling dizzy
- diarrhoea or stomach pains
- feeling tired
- fever
- effects on some blood urine tests
- feeling weak
- feeling agitated or confused
- shaking or tremors
- hallucinations (seeing or hearing things that aren't there)
- fits
- feeling unusually sleepy or drowsy
- unsteadiness when walking and lack of coordination
- difficulty speaking
- inability to think or judge clearly
- unconsciousness (coma)
- paralysis of part or all of your body
- disturbances of behaviour, speech and eye movements
- stiff neck and sensitivity to light
- inflammation of the liver (hepatitis)
- yellowing of your skin and whites of your eyes (jaundice)
- kidney problems where you pass little or no urine
- pain in your lower back, the kidney area of your back or just above your hip (renal pain).

Reporting of side effects
If you get any side effects, talk to your doctor or pharmacist. This includes any possible side effects not listed in this leaflet.
You can also report side effects directly via the Yellow Card Scheme at: 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 Zovirax
- Keep this medicine out of the sight and reach of children.
- Store below 25°C.
- Do not use Zovirax after the expiry date which is stated on the carton after Exp. The expiry date refers to the last day of that month.
- Prepare immediately before use.
- Discard unused solution.
- 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 Zovirax I.V. contains
- The active substance is aciclovir.
- The other ingredient is sodium hydroxide.

What Zovirax looks like and contents of the pack
Zovirax I.V. is supplied in glass vials, containing an off-white powder. The 250 mg strength is available in 17 ml vials, in a box containing 5 vials. The 500 mg strength is available in 24 ml vials, in a box containing 5 vials.

Marketing authorisation holder and manufacturer

Marketing authorisation holder
The Wellcome Foundation Ltd, 79 New Oxford Street, London, WC1A 1DG, United Kingdom

Manufacturer
GlaxoSmithKline Manufacturing S.p.A., Parma 43056, Italy

Other formats:
To listen to or request a copy of this leaflet in Braille, large print or audio please call, free of charge:

0800 198 5000 (UK Only)

Please be ready to give the following information:

Product name	**Zovirax I.V. 250 mg**
	Zovirax I.V. 500 mg
Reference number	00003/0159

This is a service provided by the Royal National Institute of Blind People.

This leaflet was last revised in October 2024.

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