

# ACICLOVIR

**This drug must be guardrailed**

<b>Trade Name</b>	Aciclovir-Clariv <sup>®</sup> (Clariv) solution for IV Infusion (AFT Pharmaceuticals Ltd) Aciclovir- Baxter <sup>®</sup> solution for IV infusion (Baxter Pharmaceuticals) Aciclovir Univir <sup>®</sup>																						
<b>Class</b>	Antiviral agent																						
<b>Mechanism of Action</b>	Inhibits DNA synthesis and viral replication. Active metabolite is aciclovir triphosphate.																						
<b>Indications</b>	Treatment of neonatal herpes simplex infection <b>Indication 1:</b> Skin eyes and mouth (SEM) disease <b>Indication 2:</b> CNS disease <b>Indication 3:</b> Disseminated disease <b>Indication 4:</b> Empirical treatment in infants born to mothers with evidence of <b>primary</b> herpes infection with vaginal delivery, or ruptured membranes >4 hrs or instrumentation during labour																						
<b>Contraindications</b>	Hypersensitivity to aciclovir. Caution in patients with pre-existing renal disease or with concurrent use of other nephrotoxic drugs																						
<b>Supplied As</b>	<b>IV:</b> 250mg/10mL vial, or 250mg dry powder for reconstitution (Univir brand)* <b>Oral:</b> 400mg dispersible tablets																						
<b>Dilution</b> <b>*2 dilution steps required*</b>	<p><b>IV: Clariv and Baxter brands</b></p> <table border="1"> <thead> <tr> <th>Drug</th> <th>Vial Volume</th> <th>Concentration</th> </tr> </thead> <tbody> <tr> <td>250mg</td> <td>10mL</td> <td>25mg / ml</td> </tr> </tbody> </table> <p><b>Further dilute</b> by taking 4mL (100mg) of the 25mg/mL solution and making up to 20mL with 0.9% saline or 5% dextrose to make a <b>final concentration of 5mg/mL</b></p> <p><b>IV: Univir brand</b></p> <table border="1"> <thead> <tr> <th>Drug</th> <th>Water for injection</th> <th>Concentration</th> </tr> </thead> <tbody> <tr> <td>250mg dry powder</td> <td>10 mL</td> <td>25mg / mL</td> </tr> </tbody> </table> <p>Add 10 mL of water for injection to the vial containing 250mg of aciclovir dry powder to give a concentration of 25 mg /mL</p> <p><b>Further dilute</b> by taking 4mL (100mg) of the 25mg/mL solution and making up to 20mL with 0.9% saline or 5% dextrose to make a <b>final concentration of 5mg/mL</b></p> <p><b>Oral:</b></p> <table border="1"> <thead> <tr> <th>Drug</th> <th>Water Added</th> <th>Final Volume</th> <th>Concentration</th> </tr> </thead> <tbody> <tr> <td>400mg tablet</td> <td>20mL</td> <td>20mL</td> <td><b>20mg/mL</b></td> </tr> </tbody> </table>			Drug	Vial Volume	Concentration	250mg	10mL	25mg / ml	Drug	Water for injection	Concentration	250mg dry powder	10 mL	25mg / mL	Drug	Water Added	Final Volume	Concentration	400mg tablet	20mL	20mL	<b>20mg/mL</b>
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<b>Dosage</b>	<p><b>Depending on the dose, this drug can either be infused via the Alaris pump or be guardrailed or for smaller volumes (&lt;10mL) via the T34 pump.</b></p> <p><b>Indication 1:</b> 20mg/kg/dose for 14 days  <b>Indication 2/3:</b> 20mg/kg/dose for 21 days  <b>Indication 4:</b> 20mg/kg/dose until PCR and viral culture results are negative or for up to 5 days.</p>
<b>Guardrails</b>	<p>Concentration: 5mg/mL  Soft Alert Min: 10mg/kg/hr    Hard Alert Max: 25mg/kg/hr  Soft Alert Max: 20mg/kg/hr    Default Setting: 20mg/kg/hr</p>
<b>Interval</b>	<p>8 hourly  12 hourly if &lt;34 weeks gestation, or, renal impairment</p>
<b>Administration</b>	<p>IV infusion over 1 hour  Can give oral doses after initial iv treatment at 20mg/kg/dose 6 hourly in some clinical scenarios but must be an SMO decision.</p>
<b>Compatible With</b>	<p>Glucose 4% and Sodium Chloride 0.18%, Glucose 2.5% and Sodium Chloride 0.45%, Sodium Chloride 0.9% and 0.45%, Compound Sodium Lactate (Hartmann's)</p> <p>Y site compatibility: Amphotericin B liposomal, benzylpenicillin, calcium gluconate, cefazolin, cefotaxime, ceftazidime, cefuroxime, dexamethasone, dexmedetomidine, digoxin, erythromycin lactobionate, fluconazole, furosemide, heparin sodium, hydrocortisone sodium succinate, imipenem+cilastin, insulin, metronidazole, milrinone, pancuronium bromide, phenobarbital sodium, potassium chloride, propranolol, ranitidine, sodium bicarbonate, sulfamethoxazole + trimethoprim, vancomycin, voriconazole, zidovudine</p>
<b>Incompatible With</b>	<p>TPN  Amiodarone, caffeine citrate, ciprofloxacin, dobutamine, dopamine, gentamicin, hydralazine, meropenem, midazolam, morphine, naloxone, ondansetron, paracetamol, phenytoin, piperacillin + tazobactam, potassium dihydrogen phosphate</p>
<b>Monitoring</b>	<p>Ensure adequate hydration and monitor renal function (consider impact of concomitant nephrotoxic drugs)  Maintain good urine output for 2hrs post infusion.</p>
<b>Stability</b>	<p>Contains no antimicrobial preservative, dilute immediately before use and discard any unused diluted solution.  Use a new vial for each dose.</p>
<b>Storage</b>	<p>Store at room temperature, DO NOT refrigerate – precipitate may form. Protect from light.</p>

<b>Adverse Reactions</b>	<p>Phlebitis may occur at IV site (due to alkaline pH of 10). If present dilution should be increased.</p> <p>Risk of transient renal impairment and crystalluria.</p> <p>Reversible neurological reactions have been reported (lethargy, seizures, agitation)</p> <p>Nausea and vomiting</p>																		
<b>Metabolism</b>	<p>Minimal metabolism in the liver. Primary route of excretion is the kidney. Protein binding &lt;30%</p>																		
<b>Comments</b>	<p>Infusion solution should be &lt;7mg/ml to minimise phlebitis</p> <p>Use of long courses of oral aciclovir for prevention of recurrent infection has been found to cause transient neutropenia - routine use not yet recommended. Sodium content is approximately 2.67mg/mL.</p>																		
<b>References</b>	<ol style="list-style-type: none"> <li>1. Trissell Handbook on Injectable Drugs 10<sup>th</sup> Edition</li> <li>2. NZHPA notes on Injectable Drugs 5<sup>th</sup> Edition</li> <li>3. Micromedex, Neofax, 2007</li> <li>4. NEJM 1991; 324:444-449</li> <li>5. Am J Obst Gyn 1991; 164: 569-76</li> <li>6. Pediatr Inf Dis J 1996; 15(3): 247-54</li> <li>7. Herpes. 11 Suppl 2:65A-76A, 2004 Jun</li> <li>8. Guidelines for the management of genital herpes in NZ; 8<sup>th</sup> Ed: 2007</li> <li>9. Aciclovir-Clarix data sheet. AFT Pharmaceuticals Ltd. Prepared 27<sup>th</sup> March 2014</li> </ol>																		
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