



NEONATAL



ALPROSTADIL (Prostaglandin E1)

This document should be read in conjunction with this [DISCLAIMER](#)

 **Alert** 1 microgram = 1000 nanograms

Presentation	Ampoule: 500 microgram/mL (Refrigerated)
Action & Indication	<p>Promotes dilatation of all arterioles</p> <ul style="list-style-type: none"> Used to maintain patency of ductus arteriosus in neonates with congenital heart defects dependent on ductal shunting for oxygenation and perfusion until corrective surgery can be performed. (Cyanotic heart disease, duct dependant lesions)
Contraindication	Total anomalous pulmonary venous return.
Dose	<p>Starting Dose:</p> <p>10 to 50 nanograms/kg/minute</p> <ul style="list-style-type: none"> If effective within 30 minutes, contact cardiologist for review of dose <p>Maintenance Dose:</p> <p>2.5 to 10 nanograms/kg/minute</p> <ul style="list-style-type: none"> Aim for the lowest dose that maintains ductal patency
Monitoring	<p>Neonates receiving alprostadil for more than 120 hours, or maintained on high doses, should be closely monitored for evidence of antral hyperplasia, gastric outlet obstruction and cortical hyperostosis (eg widening fontanelles)</p> <p>Aim for improving oxygen saturation, palpable femoral pulses and resolving acidosis.</p>
Adverse Effect	<p>Common: Flushing, bradycardia, tachycardia, hypotension, fever, hypoglycaemia</p> <p>Serious: May cause apnoea in infants especially in the first hour of infusion (Consider intubation and ventilation) Prolonged use in high doses may cause gastric outlet obstruction. Increased risk of haemorrhage.</p>
Administration	<p>IV Infusion: Continuous Infusion.</p> <p>If volume infused is less than 0.5mL/hr, then it must be run in conjunction with glucose 5% or sodium chloride 0.9% infusion.</p>

<p>Preparation</p>	<p>IV: Compatible Fluid : Glucose 5% , Sodium Chloride 0.9%</p> <p><u>LOW CONCENTRATION: 10 nanograms/kg/minute</u> <i>First Dilution</i> Draw up 1mL (500 microgram) of alprostadil and make up to 10mL with compatible fluid.</p> <p><i>Second Dilution</i> From the 1st solution, withdraw 0.6 mL/kg body weight (30 microgram/kg) and dilute to 50mL with compatible fluid. Final volume is 50mL.</p> <p>This will give the following infusion rate: <u>1 mL/hour = 10 nanograms/kg/minute</u></p> <p><u>HIGH CONCENTRATION: 50 nanograms/kg/minute</u> <i>First Dilution</i> Draw up 1mL (500 microgram) of alprostadil and make up to 10mL with compatible fluid.</p> <p><i>Second Dilution</i> From the 1st solution, withdraw 2.4 mL/kg body weight (120 microgram/kg) and dilute to 50mL with compatible fluid. Final volume is 50mL.</p> <p>This will give the following infusion rate: <u>1.25 mL/hour = 50 nanograms/kg/minute</u></p> <p>The infusion solution may be further diluted if required. Available from CIVAS (KEMH & PCH)</p>
<p>Related clinical guidelines</p>	<p>Congenital Diaphragmatic Hernia (CDH) Transposition of the Great Arteries (TGA) Coarctation of the Aorta (COA) & Interrupted Aortic Arch (IAA) NETS Persistent Pulmonary Hypertension of the Newborn (PPHM)</p>
<p>Comments</p>	<p>Maximum effectiveness within 96 hours of birth Check compatibility if infusing with other medications or IV solutions.</p>
<p>References</p>	<ol style="list-style-type: none"> 1. Paediatric Pharmacopoeia 13th edition 2. Neofax 2016 3. Paediatric and Neonatal Dosage Handbook 21st edition

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