

## VITAMIN K<sub>1</sub> – Phytomenadione

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| <b>Trade Name</b>          | Konakion® MM Paediatric/Konakion® MM (Roche)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Class</b>               | Fat soluble vitamin                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| <b>Mechanism of Action</b> | Plays a crucial role in the synthesis of clotting factors (II, VII, IX and X) and the anticoagulant proteins C and S.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Indications</b>         | <ol style="list-style-type: none"> <li>1. Prophylactic therapy for haemolytic disease of the newborn</li> <li>2. Treatment of haemolytic disease of the newborn or other causes of coagulopathy</li> <li>3. Maintenance therapy in the management of liver dysfunction often in the setting of cholestatic jaundice</li> </ol>                                                                                                                                                                                                                                                                                |
| <b>Contraindications</b>   | <p>Oral prophylaxis should not be used for: preterm and unwell infants or infants on antibiotics.</p> <p>IM Vit K should be used in these cases.</p> <p><b>Precautions:</b> IV administration is associated with a possible risk of kernicterus in premature infants &lt; 2.5 kg.</p> <p>Efficacy of treatment is decreased in patients with liver disease.</p>                                                                                                                                                                                                                                               |
| <b>Supplied As</b>         | <p>Ampoules (mixed micelle formulation):</p> <p>Konakion®-MM Paediatric 2mg in 0.2mL ampoules</p> <p>Konakion® – MM 10mg in 1mL ampoules<br/>(not a stock item in NICU)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Dilution</b>            | <p>Do not dilute.</p> <p>Check that solution is clear to opalescent and pale yellow.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <b>Dosage</b>              | <ol style="list-style-type: none"> <li>1. <b>Prophylaxis:</b><br/> <b>IM:</b> 1mg (0.1mL) at birth, 0.5mg (0.05ml) if &lt;1500g<br/> <b>Oral:</b> 2mg with first feed, at 5 days; and at 6 weeks</li> <li>2. <b>Haemolytic Disease of the Newborn or Coagulopathy</b><br/> 1-10mg IV slow push, at 1mg/min</li> <li>3. <b>Maintenance Therapy for Liver Dysfunction</b><br/> <b>Oral:</b> 2mg – starting dose but discuss increasing the dose with the gastroenterologist if coagulation does not improve<br/> <b>IV:</b> May require same dose IV as oral if nil by mouth or not tolerating feeds</li> </ol> |
| <b>Interval</b>            | <ol style="list-style-type: none"> <li>1. <b>IM:</b> Single dose, <b>Oral:</b> At birth, day 5, 6 weeks</li> <li>2. <b>IV:</b> Usually a single dose but repeated depending on clinical response</li> <li>3. Daily</li> </ol>                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Administration</b>      | <p><b>IM:</b> injection into the lateral thigh</p> <p><b>Oral:</b> via oral syringe</p> <p><b>IV:</b> slow push</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |

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| <b>Compatible With</b>   | <p>Do not dilute prior to administration . See below.</p> <p><b>Terminal Y-site:</b></p> <p>Adrenaline, amikacin, aminophylline, ascorbic acid, atropine, aztreonam, benzyl penicillin, calcium chloride, calcium gluconate, cefazolin, cefotaxime, cefoxitin, ceftazidime, ceftriaxone, cefuroxime, clindamycin, dexamethasone, dextrose, dopamine, epoietin alfa, erythromycin, famotidine, fentanyl, fluconazole, furosemide, ganciclovir, gentamicin, heparin, hydrocortisone, imipenem /cilastain, indomethacin, insulin, labetalol, lidocaine, midazolam, morphine, naloxone, nitroglycerin, noradrenaline, ondansetron, phenobarbital, phenylephrine, piperacillin, potassium chloride, propranolol, pyridoxine, sodium bicarbonate, sodium chloride, tobramycin, vancomycin, vasopressin.</p> |
| <b>Incompatible With</b> | <p><b>Terminal Y-site:</b></p> <p>Diazepam, diazoxide, dobutamine*, magnesium sulphate, phenytoin, sulfamethoxazole-trimethoprim</p> <p>Avoid infusing in the same line as TPN and lipid – there is no data on compatibility with these fluids</p> <p>*reports conflicting use a separate line if possible</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>Monitoring</b>        | <p>If treating clotting abnormalities check prothrombin time. (Measurable response to treatment, takes a minimum of 2 - 4 hours to occur)</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Stability</b>         | Discard ampoule after use                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>Storage</b>           | Room temperature and protect from light                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Adverse Reactions</b> | <p>Anaphylaxis reported with IV administration</p> <p>Can also cause transient flushing.</p> <p>Pain and swelling at IM site.</p> <p>Less than 1% of patients with G6PD deficiency may experience haemolysis.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Metabolism</b>        | Rapidly metabolised in the liver, excreted in bile and urine.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Comments</b>          | <p>Vitamin K intramuscular administration does not increase risk of childhood cancer. This suggestion has been disproved.</p> <p>NB Some of the compatibility information in past has been for a different formulation of the injection.</p> <p>If being discharged on a dose of &gt;2mg prescribe the larger ampoule (10mg in 1mL). For stability reasons any remaining solution should be discarded and a new ampoule used for each dose.</p>                                                                                                                                                                                                                                                                                                                                                       |
| <b>References</b>        | <ol style="list-style-type: none"> <li>1. NZHPA Notes on Injectable Drugs 5<sup>th</sup> Edition</li> <li>2. Medicines for Children, RCPCH, 1999</li> <li>3. BMJ 1993; 307:89-91 Drugs 1995; 49(3): 376</li> <li>4. Roche product info and personal communication, 2002</li> <li>5. National Women's Clinical Guidelines</li> <li>6. Neofax in <a href="http://www.micromedexsolutions.com">www.micromedexsolutions.com</a></li> <li>7. <a href="http://www.anmfonline.org">www.anmfonline.org</a></li> </ol>                                                                                                                                                                                                                                                                                         |

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| <b>Updated By</b> | P Schmidt & B Robertshawe December 2004<br>A Lynn, B Robertshawe Dec 2012 (re-order profile)<br>A Lynn, B Robertshawe July 2016<br>A Lynn, B Robertshawe March 2022 (routine update +compatibility)<br>A Lynn, B Robertshawe April 2025 ( routine update) |
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