

## MORPHINE – Neonatal Substance Withdrawal

<b>Trade Name</b>	RA Morph® - currently unavailable March 2024 Morphine Sulphate Oral Liquid (Wockhardt) <b>March 2024 (sect 29)</b>
<b>Class</b>	Opioid analgesic
<b>Mechanism of Action</b>	Binds $\mu$ opioid receptors in the central nervous system.
<b>Indications</b>	Withdrawal from Maternal Opioid medications: Using the Eat, Sleep Console tool for assessment, with bedside and team huddles. <ul style="list-style-type: none"> <li>• Yes responses to the Eat/Sleep assessments, AND</li> <li>• Consolability scale is 3 on 2 consecutive assessments, AND</li> <li>• No improvement with non-pharmacological measures</li> </ul>
<b>Contraindications</b>	Hypersensitivity to morphine. Use with caution in patients with raised intracranial pressure, hepatic or renal impairment, cardiac arrhythmia, hypotension or breathing difficulties.
<b>Supplied As</b> <b>Caution: see comments section</b>	Morphine Hydrochloride 1 mg/ mL oral mixture (RA Morph®) <b>Morphine Sulphate 10 mg/ 5 mL (= 2 mg /mL ) (Wockhardt)</b>
<b>Dilution</b>	N/A
<b>Dosage</b>	<p><b><u>Initial Dosing</u></b></p> <p>Morphine <b>0.3mg/kg/DAY in 6 divided doses (ie: 4 hourly)</b> if the 3-4hrly ESC Score is: Eat =Yes, Sleep = Yes, Consolability =3</p> <p>Morphine at <b>0.4mg/kg/DAY in 6 divided doses (ie: 4 hourly)</b> if the 3-4hrly ESC Score is: Eat =Yes, Sleep = Yes, Consolability = 3 <b>and</b> polypharmacy and high dose methadone antenatally</p> <p><b><u>Increasing the Dose</u></b></p> <p>Increase by <b>0.1mg/kg/DAY</b> increments, but, consider Increasing by <b>0.2mg/kg/DAY</b> increment if polypharmacy or high dose methadone antenatally</p> <p>If on 0.8mg/kg/DAY and not controlled, consider adding in phenobarbitone depending on the maternal drugs used</p> <p><b><u>Reducing the Dose</u></b></p> <p>When <b>stable for 48 hours</b> the first change is not a reduction in the overall daily dose but an increase in the dose interval. Give the <b>same daily dose in mg/kg/DAY in 4 divided doses ie: 6 hourly</b> as opposed to 4 hourly</p> <p>When <b>stable for 48 hours after the interval change</b> Reduce dose by <b>0.02mls</b> per dose. Review every 48 hours as inpatient Review 1-2 times a week for outpatients If this rate of reduction is not tolerated then reduce the dose by 10% instead</p>

<b>Interval</b>	Start 4 hourly, then change to 6 hourly when there has been 48 hours of stability on the ESC scoring without changing the total mg/kg/day
<b>Administration</b>	<p>Oral and given before a feed</p> <p>The solution is very bitter and may induce vomiting.</p> <ul style="list-style-type: none"> <li>• If the infant has a large vomit within 10 minutes of being given a dose – repeat the dose</li> <li>• If the infant has a large vomit more than 10 minutes after the dose – give an extra <u>half</u> dose</li> <li>• If the infant vomits 20 – 30 minutes after the dose or <u>after</u> the feed - <b>do not repeat the dose</b></li> </ul>
<b>Compatible With</b>	N/A
<b>Incompatible With</b>	N/A
<b>Monitoring</b>	<p>Oral morphine doses greater than 0.8mg/kg/day require that the infant has cardiorespiratory monitoring as the dose is introduced</p> <p>Bowel and urinary output (especially at higher doses).</p>
<b>Stability</b>	Discard 6 months after opening or as per manufacturer's expiry. (which ever date is shortest)
<b>Storage</b>	Controlled Drug Cupboard
<b>Adverse Reactions</b>	<p>Respiratory depression, bradycardia, hypotension, ileus and delayed gastric emptying, urinary retention, sweating, nausea and vomiting, development of tolerance. Seizures (higher doses).</p> <p>Naloxone reverses effects. Mechanical Ventilation may be preferable if narcotic effects are required.</p>
<b>Metabolism</b>	Hepatic conversion to glucuronide metabolites which are renally excreted. Variable pharmacokinetics. Elimination half life approximately 9 hours.
<b>Interactions</b>	Morphine decreases effects of diuretics by inducing release of ADH. Morphine may increase zidovudine levels by competitively inhibiting glucuronidation or directly inhibiting metabolism.
<b>Comments</b>	<p><b>In March 2024 medication shortage required a temporary switch to using the Wockhardt brand of Morphine Sulphate Liquid 10 mg /5 mL (equivalent to 2 mg/ mL) which is a section 29 medication.</b></p> <p>RA-Morph® and Morphine Sulphate (Wockhardt) are both presented as a clear colourless or pale-yellow solution.</p> <p>They are both sugar and alcohol free.</p> <p><b>Note:</b> It is recommended that Oramorph® another alternative oral morphine liquid product should not be stocked in NICU because this product contains 10% alcohol.</p>

	<p>Outpatient's prescriptions for morphine must be written on a Controlled Drug Prescription form.</p> <p>Morphine for NSW infants is prescribed on a weekly basis.</p> <p>The dose of morphine should be reduced by 0.05mL per dose 1-2 times a week.</p> <p>The total volume prescribed should include an extra 2mL in excess of the volume expected to be used over the 7 day period in order to allow for some loss associated with the drawing up process. (approximately 0.05mL /oral syringe).</p> <p>In order to permit the pharmacist to dispense a greater volume than that expected from the dose prescribed instructions for administration on the prescription should include the words "as instructed."</p> <p>Eg Rx     Morphine Sulphate Oral Solution (TWO mg/mL)        Sig     Zero point two (0.2) mL every six hours as instructed        Mitte   Six point six (6.6) mL</p>
<b>References</b>	<ol style="list-style-type: none"> <li>1. Neofax in <a href="http://www.micromedexsolutions.com">www.micromedexsolutions.com</a></li> <li>2. Medicines for Children RCPCH.</li> <li>3. ADC 2000;83:F101-3</li> <li>4. The Journal of Clinical Pharmacology 2016, 56(8) 1009–1018</li> </ol>
<b>Updated By</b>	<p>A Lynn and B Robertshawe September 2007  A Lynn, B Robertshawe Nov 2012 (re-order profile)  N Austin, K Hougland, M Wallenstein, B Robertshawe Dec 2021  A Lynn, N Austin June 2022 – clarify dosing per DAY, morphine sticker  B Dixon, N Austin, B Robertshawe April 2024 (Temporary change of oral brand)</p>