



**MONOGRAPH**

**Clindamycin Monograph - Paediatric**

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| <b>Scope (Staff):</b> | Medical, Nursing, Pharmacy      |
| <b>Scope (Area):</b>  | Perth Children's Hospital (PCH) |

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

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| <b>DESCRIPTION</b>                  | <ul style="list-style-type: none"> <li>Clindamycin is a semi-synthetic lincosamide antibiotic effective against aerobic Gram positive and anaerobic Gram positive and negative bacteria.<sup>(1-3)</sup></li> <li>It inhibits protein synthesis by binding to the 50S ribosomal subunit.<sup>(1-3)</sup></li> </ul>  |
| <b>INDICATIONS AND RESTRICTIONS</b> | <p>Clindamycin is indicated in the treatment of serious infections caused by gram positive bacteria resistant to other agents (e.g. Methicillin resistant <i>Staphylococcus aureus</i> [MRSA]) or in patients allergic to other agents (e.g. penicillin and/or cephalosporin allergy) and as an adjunct to standard beta-lactam antibiotics in specific clinical situations (e.g. severe Group A Streptococcal infections).<sup>(1-4)</sup></p> <p><b>IV: Monitored (orange) antibiotic</b></p> <ul style="list-style-type: none"> <li>If the use is consistent with a standard approved indication, this must be communicated to ChAMP by documenting that indication on all prescriptions (inpatient and outpatient).</li> <li>The ChAMP team will review if ongoing therapy is required and/or if the order does not meet ChAMP Standard Indications.</li> <li>If use is not for a standard approved indication, phone approval must be obtained from ChAMP before prescribing.</li> </ul> <p><b>Oral and topical: Unrestricted (green) antibiotic</b></p> <ul style="list-style-type: none"> <li>This is not a restricted agent.</li> <li>Follow standard ChAMP guidelines where appropriate.</li> </ul> |
| <b>CONTRAINDICATIONS</b>            | <ul style="list-style-type: none"> <li>Clindamycin is contraindicated in patients with a previous hypersensitivity reaction to clindamycin, lincomycin or any of the ingredients contained in the product.<sup>(4,5)</sup></li> </ul>  |
| <b>PRECAUTIONS</b>                  | <ul style="list-style-type: none"> <li>Hypotension and cardiac arrest have been reported with rapid intravenous administration. Clindamycin should be diluted to a strength of 18mg/mL or less and the rate of administration should NOT exceed 30mg/minute.<sup>(6,7)</sup></li> <li>The IV preparation contains benzyl alcohol which has been</li> </ul>   |

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|                     | <p>associated with gasping syndrome in neonates, it should be used with caution.<sup>(3,4,7,8)</sup></p> <ul style="list-style-type: none"> <li>• Clindamycin should be used with caution in patients with a history of pseudomembranous colitis associated with clindamycin or other lincosamide antibiotics (administered orally, intravenously or topically), and in patients with ulcerative colitis or enteritis.<sup>(3,4,8,9)</sup></li> <li>• Patients, parents and carers should be instructed to cease therapy and contact the prescriber if any diarrhoea develops whilst on clindamycin and up to 2 months after ceasing therapy.<sup>(3, 7-9)</sup></li> </ul>  |
| <b>FORMULATIONS</b> | <p><b>Available at PCH:</b></p> <ul style="list-style-type: none"> <li>• 150mg Capsules</li> <li>• 600mg/4mL Solution for Injection</li> <li>• 1% topical solution</li> <li>• clindamycin 1% with benzoyl peroxide 5% gel (Duac<sup>®</sup> Once Daily Gel)</li> </ul> <p><b>Other formulations available:</b></p> <ul style="list-style-type: none"> <li>• 150mg capsules (multiple generic brands)</li> <li>• 300mg/2mL and 600mg/4mL solution for injection</li> <li>• 1% topical lotion</li> <li>• 1% topical gel</li> <li>• 2% vaginal cream</li> </ul>   |
| <b>DOSAGE</b>       | <ul style="list-style-type: none"> <li>• The doses listed below fall within the standard range. Higher doses may be prescribed for certain situations in consultation with an infectious diseases or clinical microbiology consultant.</li> </ul> <p><b>Neonates (&lt;1 month of age):</b></p> <ul style="list-style-type: none"> <li>• Please refer to <a href="#">neonatal clinical care drug protocols</a></li> </ul> <p><b><u>IV: 1 month to 18 years</u></b></p> <ul style="list-style-type: none"> <li>• <b>Usual dose:</b> 10mg/kg/dose (to a maximum of 600mg) given 8 hourly.<sup>(1,2,10)</sup></li> <li>• <b>Severe infections:</b> 10mg/kg/dose (to a maximum of 600mg) given 6 hourly.<sup>(1,2,10)</sup></li> <li>• <b>Note:</b> Clindamycin has excellent oral bioavailability. Consider step down to oral antibiotic therapy when clinically appropriate.<sup>(1,4)</sup></li> <li>• <b>HiTH patients:</b> 30-40mg/kg/DAY in 3 to 4 divided doses OR via continuous infusion (maximum total daily dose of 2.4grams).</li> <li>• Higher doses may be used in some circumstances in consultation with infectious diseases or clinical microbiology.</li> <li>• <b>Surgical prophylaxis:</b> 15mg/kg (to a maximum of 600mg) as a single dose with the infusion completed 60 minutes prior to knife to skin. Repeat dose if operation &gt; 6 hours. If further post-surgical</li> </ul> |

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|                          | <p>doses are required, clindamycin should be dosed at 10mg/kg/dose (to a maximum of 600mg) 8 hourly.</p> <p><b><u>Oral: 1 month to 18 years:</u></b></p> <ul style="list-style-type: none"> <li>• Usual dose: 10mg/kg/dose (to a maximum of 450mg) given 8 hourly.<sup>(10)</sup></li> </ul> <p><b><u>Topical</u></b></p> <ul style="list-style-type: none"> <li>• <b>Gel</b> (only indicated for acne): apply once daily.</li> <li>• <b>Topical solution or lotion</b> (only indicated for acne): apply approximately 2mL twice daily.<sup>(1,10)</sup></li> <li>• <b>Vaginal cream:</b> Apply ONE applicator full (5g) of cream intravaginally at bedtime for 7 days.<sup>(5)</sup></li> </ul>  |
| <b>DOSAGE ADJUSTMENT</b> | <p><b>Dosage adjustment required in renal impairment:</b></p> <ul style="list-style-type: none"> <li>• No dosage adjustments are recommended for patients with renal impairment. The half-life of clindamycin is slightly extended in severe renal impairment.<sup>(4,6)</sup></li> </ul> <p><b>Dosage adjustment required in hepatic impairment:</b></p> <ul style="list-style-type: none"> <li>• No dosage adjustments are recommended for patients with hepatic impairment. The half-life of clindamycin is extended in severe hepatic impairment, although no specific dosage adjustment is recommended.<sup>(4,6)</sup></li> </ul>   |
| <b>RECONSTITUTION</b>    | <p><b>Solution for infusion:</b></p> <ul style="list-style-type: none"> <li>• Further dilution is required (see administration section below), use the solution prepared in Pharmacy Compounding Service (PCS) where possible.</li> </ul>   |
| <b>ADMINISTRATION</b>    | <p><b>IV infusion:</b></p> <ul style="list-style-type: none"> <li>• Dilute to 18mg/mL or weaker and infuse over 10 – 60 minutes and at a rate no greater than 30mg/minute.<sup>(6-9)</sup></li> </ul> <p><b>Continuous infusion:</b></p> <ul style="list-style-type: none"> <li>• May be given over 24 hours by continuous infusion.</li> <li>• Contact Pharmacy for advice.<sup>(6)</sup></li> </ul> <p><b>Oral:</b></p> <ul style="list-style-type: none"> <li>• Swallow capsules whole with a glass of water without regard to food intake.</li> <li>• If the patient is unable to swallow capsules or the dose is not a multiple of 150mg then the capsule(s) may be opened and the contents of the capsule(s) dissolved in water (for example, the contents of a 150mg capsule is dissolved in 3mL of water to give a 50mg/mL solution).<sup>(5)</sup></li> <li>• If only a portion of the mixture is required, draw up the required volume and discard the remaining solution.</li> </ul> |


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|                          | <ul style="list-style-type: none"> <li>The contents of the capsule may be mixed in juice or soft food to disguise the taste. (Note: Clindamycin solution is extremely unpalatable – ensure a test dose is given to ensure tolerability).<sup>(1,5)</sup></li> </ul>   |
| <b>MONITORING</b>        | <ul style="list-style-type: none"> <li>Hepatic function, renal function and full blood picture should be monitored weekly with prolonged therapy (i.e. longer than 7 days).<sup>(8,9)</sup></li> </ul>  |
| <b>ADVERSE EFFECTS</b>   | <ul style="list-style-type: none"> <li><b>Common:</b> diarrhoea (mild-to-severe), nausea, vomiting, abdominal cramps, rash, itch.<sup>(1, 3, 8)</sup></li> <li><b>Rare:</b> <i>Clostridium difficile</i>-associated diarrhoea, pseudomembranous colitis, toxic epidermal necrolysis, Steven's Johnson syndrome, taste disturbance, anaphylaxis, blood dyscrasias, polyarthritis, jaundice, raised liver enzymes (with high doses); IV: hypotension, cardiac arrest (with rapid injection), thrombophlebitis.<sup>(1, 3, 8)</sup></li> </ul>   |
| <b>COMPATIBLE FLUIDS</b> | <ul style="list-style-type: none"> <li>Glucose 5%</li> <li>Glucose/sodium chloride solutions</li> <li>Sodium chloride 0.9%</li> <li>Hartmann's<sup>(6,7)</sup></li> </ul>   |
| <b>STORAGE</b>           | <p><b>IV solution:</b></p> <ul style="list-style-type: none"> <li>Store ampoules and products prepared by PCS at 2-8°C.<sup>(5)</sup></li> </ul> <p><b>Oral capsules:</b></p> <ul style="list-style-type: none"> <li>Oral capsules should be stored below 25°C.<sup>(5)</sup></li> </ul> <p><b>Topical preparations:</b></p> <ul style="list-style-type: none"> <li>Clindamycin gel should be stored between 2°C and 8°C. The gel must be discarded two months after opening.<sup>(5)</sup></li> <li>Clindamycin lotion and cream should be stored below 25°C.<sup>(5)</sup></li> <li>Clindamycin solution should be stored below 30°C and protected from light.<sup>(5)</sup></li> </ul> |
| <b>INTERACTIONS</b>      | <p><b>Clindamycin may interact with other medications; please consult PCH approved references (e.g. <a href="#">Clinical Pharmacology</a>), your ward pharmacist or Pharmacy on extension 63546 for more information.</b></p> <ul style="list-style-type: none"> <li>Clindamycin enhances the effect of non-depolarising muscle relaxants.<sup>(8)</sup></li> <li>Clindamycin antagonises the effects of neostigmine and pyridostigmine.<sup>(5,8)</sup></li> </ul>   |

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| <b>COMMENTS</b>                             | <ul style="list-style-type: none"> <li>• Ampoule for injection contains benzyl alcohol which may cause allergic reactions in some people and/or gasping syndrome in neonates.<sup>(1, 3,7)</sup></li> <li>• Clindamycin has good oral bioavailability – consider switching to oral dosing as soon as clinically appropriate.<sup>(3)</sup></li> <li>• Clindamycin obtains good concentration in the bone and is excreted in the urine and bile. It has relatively poor CNS penetration.<sup>(4)</sup></li> </ul> |
| <b>MANUFACTURER SAFETY DATA SHEET (SDS)</b> | To access to the Manufacturer SDS for this product, use the following link to <a href="#">ChemAlert</a> .  |

*\*\*Please note: The information contained in this guideline is to assist with the preparation and administration of **clindamycin**. Any variations to the doses recommended should be clarified with the prescriber prior to administration\*\**

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| <b>Related internal policies, procedures and guidelines</b>   |
| <a href="#">Antimicrobial Stewardship Policy</a>  |
| <a href="#">ChAMP Empiric Guidelines</a>  |
| <b>References</b>   |
| <ol style="list-style-type: none"> <li>1. Rossi S, editor. Australian Medicines Handbook 2019. Adelaide, S. Aust.: Australian Medicines Handbook; 2019.</li> <li>2. Antibiotic Writing Group. Therapeutic Guidelines - Antibiotic. West Melbourne: Therapeutic Guidelines Ltd; 2019. Available from: <a href="http://online.tg.org.au.pklibresources.health.wa.gov.au/ip/">http://online.tg.org.au.pklibresources.health.wa.gov.au/ip/</a>.</li> <li>3. Taketomo CK, Hodding JH, Kraus DM, Hodding JH. Pediatric and Neonatal dosage handbook with international trade names index. 24<sup>th</sup> ed. Ohio: Lexi-comp; 2017-2018.</li> <li>4. Clinical Pharmacology [Internet]. Elsevier BV. 2019 [cited 22/08/2019]. Available from: <a href="http://pklibresources.health.wa.gov.au/login?url=http://www.clinicalpharmacology-ip.com/?id=24317714">http://pklibresources.health.wa.gov.au/login?url=http://www.clinicalpharmacology-ip.com/?id=24317714</a>.</li> <li>5. MIMS Australia. MIMS online [full product information]. St Leonards, N.S.W: CMP Medica Australia.; 2019. p. 1v. (various pagings).</li> <li>6. Phelps S Hagemann T Lee K Thompson A. Pediatric Injectable Drugs: The Teddy Bear Book. 11th Edition ed. Maryland: American Society of Health-System Pharmacists.</li> <li>7. Burrige N, Deidun D, Collard N (editors). Australian injectable drugs handbook. Collingwood: The Society of Hospital Pharmacists of Australia; 2019.</li> <li>8. Paediatric Formulary Committee. BNF for Children: 2019. London: BMJ Group Pharmaceutical Press; 2019.</li> <li>9. Micromedex 2.0 [Internet]. Truven Health Analytics. 2019 [cited 22/08/2019]</li> <li>10. Royal Australian College of General Practitioners, Pharmaceutical Society of Australia, Australasian Society of Clinical and Experimental Pharmacologists and Toxicologists. AMH: Children's Dosing Companion. Adelaide: Australian Medicines Handbook Pty Ltd; 2019.</li> </ol> |

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