

SESLHDPR/602 Prescribing Protocol

Phentolamine use as an antidote for extravasation of peripherally administered noradrenaline (norepinephrine)



Prescribing Protocol Template for New Drugs

Title	Phentolamine use as an antidote for extravasation of peripherally administered noradrenaline (norepinephrine)
Areas where Protocol/Guideline applicable	SESLHD Adult Intensive Care and Emergency Departments
Areas where Protocol/Guideline not applicable	Areas where noradrenaline is not approved for peripheral administration
Authorised Prescribers	To be used only in areas where peripheral noradrenaline infusion has been approved
Indication for use	Reversal of vasoconstriction due to extravasation of peripheral administration of noradrenaline
Clinical condition	<p>In acute emergency situations and in accordance with local protocols, noradrenaline can be given via a peripheral IV line whilst trying to obtain central access.</p> <p>Phentolamine is to be used for the treatment of injection site extravasation and to prevent tissue necrosis following extravasation of noradrenaline peripheral infusion.</p>
Contra-indications	Angina, coronary artery disease, hypotension, hypersensitivity to phentolamine
Precautions	<p>Sulphite sensitivity</p> <p>History of cardiovascular disease; increased risk of tachycardia and cardiac arrhythmias</p> <p>Cerebrovascular spasm and occlusion have been reported, usually in association with marked hypotensive episodes following parenteral administration</p> <p>Gastritis or peptic ulcer</p>
Place in Therapy	First line treatment to prevent sloughing and necrosis in areas in which peripheral noradrenaline extravasation has occurred.
If part of combination therapy, list other drugs	N/A
Dosage (Include dosage adjustment for specific patient groups)	Phentolamine 5 to 10 mg diluted in 10mL sodium chloride 0.9%, infiltrated into the affected region as soon as possible after extravasation is noted, but within 12 hours following extravasation.
Duration of therapy	To be used within 12 hours of extravasation. Immediate use only.
Important Drug Interactions	Other medications that cause hypotension

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Administration instructions	<p>Treatment of Extravasation¹:</p> <ul style="list-style-type: none">A. Notify Senior Medical Officer on dutyB. Stop the infusion immediately⁶C. Aspirate noradrenaline, do not flush the line⁶D. Outline the extent of extravasation marking on the skin to provide baseline for monitoringE. The treatment for extravasation ischaemia is phentolamine: <div style="border: 1px solid black; padding: 5px;"><p>Phentolamine should be kept on the shelf next to noradrenaline in areas where peripheral noradrenaline infusion is authorised</p><p>Phentolamine is a Special Access Scheme (SAS) medication. A SAS Category A form and patient consent for exception use of medicine form is required to be completed.</p></div> <div style="border: 1px solid black; padding: 5px;"><p>Using a fine needle, liberally infiltrate phentolamine 5 to 10 mg (diluted in 10 mL sodium chloride 0.9%) throughout the ischaemic area* as soon as possible after extravasation is noted⁶.</p><p>*identified by its cold , hard, pale appearance</p></div> <ul style="list-style-type: none">F. Request plastic surgery team review in-hours if extravasation occurs.G. Log notification of incident in the Incident Information Management System (IMMS) http://seslhnweb/Clinical_Governance/Incident_Management/IIMS/default.asp
Monitoring requirements Safety Effectiveness (state objective criteria)	<p>Outline extent of the extravasation by marking on the skin to provide baseline for monitoring</p> <p>Sympathetic blockade with phentolamine should result in blanching being reversed immediately.</p> <p>Continue to monitor and observe the site, if blanching returns notify Medical Officer on duty as additional phentolamine injections may be required.</p> <p>Request plastic surgery team review in-hours</p>
Management of complications	<p>Escalate to Senior Medical Officer and request plastic surgery team review/consult in-hours if extravasation occurs.</p>

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<p>Basis of Protocol/Guideline (including sources of evidence, references)</p>	<p>1. Cardenas-Garcia, J., Schaub, K. F., Belchikov, Y. G., Narasimhan, M., Koenig, S. J., & Mayo, P. H. (2015). Safety of peripheral intravenous administration of vasoactive medication. <i>Journal of hospital medicine</i>, 10(9), 581-585</p> <p>2. Loubani OM et al. A systematic review of extravasation and local tissue injury from administration of vasopressors through peripheral intravenous catheters and central venous catheters. <i>J Crit Care</i> 2015; 30 (3): 653.e9 – 653.e17.</p> <p>3. Doellman D, Hadaway L, Bowe-Geddes LA, et al, "Infiltration and Extravasation: Update on Prevention and Management," <i>J Infus Nurs</i>, 2009, 32(4):203-11. [PubMed 19605999]</p> <p>4. Flemmer L, Chan JS. A pediatric protocol for management of extravasation injuries. <i>Pediatr Nurs</i>. 1993;19(4):355-358, 424. [PubMed 8414723]</p> <p>5. Hill JM. Phentolamine mesylate: the antidote for vasopressor extravasation. <i>Crit Care Nurse</i>. 1991;11(10):58-61. [PubMed 1720079]</p> <p>6. https://www.accessdata.fda.gov/drugsatfda_docs/label/2007/007513Orig1s024lbl.pdf accessed 28/11/17</p> <p>7. UpToDate Phentolamine: Drug Information version 126 accessed 9/2/17</p>
<p>Groups consulted in development of this protocol</p>	<p>POWH ED Nursing Staff POWH ED Medical Staff POWH Pharmacy</p>

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GOVERNANCE	
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Chairperson, QUM Committee	Prof George Rubin

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