SESLHDPR/602 Prescribing Protocol

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

Health
South Eastern Sydney Local Health District

Prescribing Protocol Template for New Drugs	
Title	Phentolamine in the treatment of dermal necrosis or sloughing following extravasation of peripherally administered noradrenaline (norepinephrine)
Areas where Protocol/Guideline applicable	SESLHD Adult Intensive Care (AICU) and Emergency Departments (ED)
Areas where Protocol/Guideline not applicable	Areas where noradrenaline is not approved for peripheral administration
Authorised Prescribers	AICU and ED Medical Officers
Indication for use	Reversal of vasoconstriction and treatment of dermal necrosis and sloughing following extravasation of peripheral administration of noradrenaline (norepinephrine)
Clinical condition	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. Phentolamine is to be used for the treatment of injection site extravasation and to prevent tissue necrosis following extravasation of noradrenaline peripheral infusion.
Contra-indications	Hypersensitivity to phentolamine
Precautions	Hypotension History of cardiovascular disease; increased risk of tachycardia and cardiac arrhythmias Cerebrovascular spasm and occlusion have been reported, usually in association with marked hypotensive episodes following parenteral administration Gastritis or peptic ulcer
Place in Therapy	First line treatment to prevent sloughing and necrosis in areas in which peripheral noradrenaline extravasation has occurred.
Dosage (Include dosage adjustment for specific patient groups)	Phentolamine 5 to 10 mg diluted in 10 mL 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	Immediate use only.
Important Drug Interactions	Other medications that cause hypotension

Administration instructions	**Treatment of Extravasation[1]:** A. Notify Senior Medical Officer on duty B. Stop the noradrenaline infusion immediately[6] C. Do NOT remove the catheter/needle immediately D. Aspirate as much of the residual noradrenaline as possible, E. Do NOT flush the line[6] F. Outline the extent of extravasation marking on the skin to provide baseline for monitoring G. **The treatment for extravasation ischaemia is phentolamine**: Phentolamine should be kept in the fridge in the clinical areas where peripheral noradrenaline infusion is authorised, namely ED & AICU. Phentolamine is a Special Access Scheme (SAS) medication. A SAS Category A form and patient consent for exceptional use of medicine form is required to be completed. Store at between 2 and 8 degrees C^0 **Using a fine needle, subcutaneously inject phentolamine 5 mg to 10 mg (diluted in 10 mL sodium chloride 0.9%) throughout the ischaemic area* as soon as possible after extravasation is noted[6].** *identified by its cold , hard, pale appearance The reconstituted solution should be used immediately and should not be stored[1] H. Once the wound has been irrigated and/or an antidote has been administered, the peripheral intravenous catheter should be removed and replaced, as needed, at a site remote from the site of extravasation.[8] I. **Request plastic surgery team review in-hours if extravasation occurs.** J. Log notification of incident in the Incident Information Management System (IIMS)
Monitoring requirements Safety Effectiveness (state objective criteria)	Outline extent of the extravasation by marking on the skin to provide baseline for monitoring. Sympathetic blockade with phentolamine should result in blanching being reversed immediately. Continue to monitor and observe the site, if blanching returns notify Medical Officer on duty as additional phentolamine injections may be required. Request plastic surgery team review in-hours.
Management of complications	Escalate to Senior Medical Officer.

Basis of Protocol/Guideline (including sources of evidence, references)	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. Journal of hospital medicine, 10(9), 581-585 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. J Crit Care 2015; 30 (3): 653.e9 – 653.e17. 3. Doellman D, Hadaway L, Bowe-Geddes LA, et al, "Infiltration and Extravasation: Update on Prevention and Management," J Infus Nurs, 2009, 32(4):203-11. [PubMed 19605999] 4. Flemmer L, Chan JS. A pediatric protocol for management of extravasation injuries. Pediatr Nurs. 1993;19(4):355-358, 424. [PubMed 8414723] 5. Hill JM. Phentolamine mesylate: the antidote for vasopressor extravasation. Crit Care Nurse. 1991;11(10):58-61. [PubMed 1720079] 6. Micromedex database: phentolamine. Accessed 15/7/2021 7. Phentolamine mesylate. US prescribing information. South Beloit, IL: Precision Dose Inc. Updated June 2019. Available from www.dailymed.nlm.nih.gov. Accessed 15/7/2021 8. UpToDate. Extravasation injury from chemotherapy and other non-antineoplastic vesicants. Updated Jan 2020. Accessed 26/11/2021
Groups consulted in development of this protocol	POWH ED Nursing Staff POWH ED Medical Staff POWH Pharmacy

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GOVERNANCE	
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