SESLHDMG/140 Medicine Guideline

Sodium thiosulfate for calciphylaxis in dialysis patients

Health
South Eastern Sydney
Local Health District

Areas where Protocol/Guideline applicable	Haemodialysis Units and Renal/Nephrology inpatient wards
Authorised Prescribers:	Initiation on recommendation by treating consultant nephrologist Medical officers assigned to renal unit or renal team. Special Access Scheme (SAS) application must be submitted via the SAS online system and informed consent for use obtained.
Indication for use	Treatment of confirmed calciphylaxis in dialysis patients
Clinical condition Patient selection: Inclusion criteria (list investigations necessary and relevant results)	Calciphylaxis diagnosed in a patient on dialysis. The diagnosis may be confirmed on skin biopsy or could be a clinical suspicion of calciphylaxis due to lesion appearance.
Proposed Place in Therapy	First line therapy for confirmed calciphylaxis
Contra-indications	Nil specific contraindications identified
Precautions	• Hypersensitivity to sodium thiosulfate • Hypotension – sodium thiosulfate can cause serious hypotension • Anaemia • Diminished oxygen or cardiovascular reserve • Congenital methemoglobin reductase deficiency, and other conditions or concurrent drugs associated with risk of developing methemoglobinaemia • Glucose-6-phosphate dehydrogenase deficiency – increased risk of haemolytic crisis • Oedematous sodium retaining conditions, like liver cirrhosis, congestive heart failure, and renal impairment
Important Drug Interactions	No known significant interactions
Dosage	Sodium thiosulfate 25 g IV three times a week
Duration of therapy	Until improvement seen in skin lesions
Prescribing Instructions	**Outpatient:** Prescribe on the IV Adult Fluid Order Form **Inpatient:** Prescribe on eMR

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Administration Instructions	Infuse 25 g/100 mL vial undiluted intravenously over 60 minutes (usually during the last hour of haemodialysis)
Adverse effects	**Cardiovascular system.** Hypotension. **Central nervous system.** Headache, disorientation, psychotic behaviour, including agitation, delusions and hallucinations may result from excess thiocyanate production. **Gastrointestinal system.** Diarrhoea (usually from oral doses), osmotic disturbances. Nausea and vomiting may result from excess thiocyanate production. **Genitourinary system.** Diuretic effects are possible. **Musculoskeletal system.** Arthralgia, hyper-reflexia and muscle cramps may result from excess thiocyanate production. **Ocular system.** Blurred vision may result from excess thiocyanate production. **Ototoxicity.** Tinnitus may occur from excess thiocyanate production.
Monitoring requirements Safety Effectiveness (state objective criteria)	• BP • Oxygen levels • Calcium levels • QT prolongation Resolution/improvement in number and size of lesions
Management of Complications	Hypocalcemia/Metabolic acidosis – Bloods on dialysis. Managed as per clinical recommendations. Cease infusion in the setting of severe hypocalcemia or metabolic acidosis. Hypotension – reduce the rate of infusion QT Prolongation – consider reducing the rate of infusion or cease the infusion and ask for medical review
Basis of Protocol/Guideline: (including sources of evidence, references)	N Engl J Med 2018; 378:1704-1714 DOI:10.1056/NEJMra1505292 MIMS Online. DBL Sodium Thiosulfate Injection – Product Information. Date of revision 21 October 2020 Micromedex (2025). Sodium nitrite/sodium thiosulfate. UpToDate (2018). Calciphylaxis (calcific uremic arteriolopathy). Last updated 27 June 2025. UpToDate (2019). Sodium thiosulfate: Drug information monograph. 2025

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Groups consulted in development of this guideline	Department of Nephrology, POWH Pharmacy, POWH

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GOVERNANCE	
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