MONOGRAPH

Thiopental (Thiopentone)

Scope (Staff):	Medical, Pharmacy, Nursing, Anaesthetic Technicians
Scope (Area):	All Clinical Areas

Child Safe Organisation Statement of Commitment

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this DISCLAIMER

⚠ HIGH RISK MEDICINE ⚠

QUICKLINKS

Dosage/Dosage Adjustments	Administration	Compatibility	Monitoring

DRUG CLASS

Barbiturate[1]

Thiopental is a High Risk Medicine.

INDICATIONS AND RESTRICTIONS

- Induction of general anaesthesia[1, 2]
- Short term control of refractory status epilepticus[1, 2]

CONTRAINDICATIONS

- Hypersensitivity to thiopental or any component of the formulation[3]
- Hypersensitivity to other barbiturates[1]
- Porphyria[1, 2]
- Myotonic dystrophy[2]
- Constrictive pericarditis[3]
- Complete absence of suitable veins[3]
- Status asthmaticus or if an adequate airway cannot be maintained[3]

PRECAUTIONS

Thiopental should only be given under the strict supervision of an anaesthetist/doctor skilled in the management of artificial respiration, and only when facilities are instantly available for endotracheal intubation and providing adequate ventilation of the patient.

- Asthma – Thiopental can cause bronchospasm. Consider an alternative agent if available[1]
- Patients with severe respiratory compromise – further respiratory depression can occur. Use with caution[1]
- Neuromuscular disorders (including myasthenia gravis, muscular dystrophies and myotonias) – respiratory depression may be prolonged or potentiated. Reduce dose[1]
- Severe cardiovascular disease, hypotension, dehydration, hypovolaemia, severe haemorrhage, burns, shock, adrenal insufficiency, myxoedema, uraemia, severe anaemia – Use with extreme caution. May prolong or potentiate hypnotic effect[1, 3]
- Hepatic and renal dysfunction – Use with caution. Hypnotic effect may be prolonged[4, 5]

FORMULATIONS

Listed below are products available at PCH, other formulations may be available, check with pharmacy if required:

- Thiopental Sodium 470 mg vial (OmegaPharm®)

Note: Different brand products are not equivalent.

Imprest location: Formulary One

DOSAGE & DOSAGE ADJUSTMENTS

Intravenous:

Thiopental is only to be prescribed in a critical care setting under the direction of a doctor competent in airway management such as an Anaesthetist, Emergency Department Physician, Intensivist or Neonatologist

Refractory prolonged status epilepticus (≥ 4 weeks old):

- **Loading Dose**: 2 – 4 mg/kg[2, 5]
  - Doses up to 7 mg/kg can be used.[5]

Following a loading dose, a continuous infusion may be initiated if required.[2]

- **Continuous Infusion**: 0.5 – 8 mg/kg/hour. Titrate to effect.[2]

Induction of Anaesthesia (> 4 weeks old):

- **Loading Dose**: up to 4 mg/kg[2]

Further 1 mg/kg doses can be given if required to a maximum of 7 mg/kg per course.[2]

Renal impairment:

- Use with caution in severe impairment – reduce dose by 75% in patients with a GFR less than 10 mL/minute[4, 5]
- eGFR calculator

Hepatic impairment:

- Use with caution – dose reduction may be required. Hypnotic effect may be prolonged. [2,4,5]

RECONSTITUTION & ADMINISTRATION

Reconstitution:

Thiopental Sodium 470 mg vial (OmegaPharm):

- Reconstitute vial with 9.4 mL of water for injection to make a final concentration of 50 mg/mL[6,7]

Administration:

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- Flush IV cannula with sodium chloride 0.9% after each dose to avoid re-sedation during recovery[7]
- Extravasation Risk – monitor frequently for signs of extravasation[7]

Intravenous Injection:

- Give undiluted or dilute dose to between 20 - 50 mg/mL[7]
- Administer over at least 20 seconds[7]

Intermittent Infusion:

- Give undiluted or dilute dose to between 20 - 50 mg/mL[7]
- Infuse over 10 minutes to 1 hour[7]

Continuous Infusion - CVAD:

Patient's Weight	Concentration (In Sodium Chloride 0.9% or Glucose 5%)
All Patients	470 mg in 50 mL (9.4 mg/mL)
All Patients – HIGH concentration (Fluid Restricted Patients)	940 mg in 50 mL (18.2 mg/mL)

COMPATIBILITY *(LIST IS NOT EXHAUSTIVE)*

Compatible fluids:

Glucose 5%, sodium chloride 0.9%, sodium chloride 0.45%[6]

Compatible at Y-site:

Plasma-Lyte-148[6]

Only commonly used drugs are listed below. This is not a complete list of incompatible drugs. Compatibilities of IV drugs must be checked when two or more drugs are given concurrently.

INCOMPATIBLE drugs:

Adrenaline (epinephrine) hydrochloride, benzylpenicillin, calcium salts, dobutamine, dopamine, fentanyl, foscarnet, hydromorphone, lidocaine, linezolid, methadone, metaraminol, midazolam, morphine sulfate, noradrenaline (norepinephrine), ondansetron, pethidine, phenylephrine, piperacillin-tazobactam, potassium acetate, potassium chloride, promethazine, rocuronium, sodium bicarbonate, suxamethonium, vecuronium[6]

MONITORING

- Heart rate[8]
- Blood pressure[8]
- Respiratory rate[8]
- Neuromuscular function and degree of muscle paralysis (e.g. presence of spontaneous movement, ventilator asynchrony, shivering)[8]
- Extravasation injury[1]
- Cardiac function[8]
- Cognitive deficits post administration[8]
- Urea and electrolyte levels (consider monitoring during infusion duration and for 24 hours post cessation due to the risk of rebound hypersalaemia)[2]

ADVERSE EFFECTS

Common: transient erythema noted as blushing, hypotension, respiratory and myocardial depression, prolonged somnolence with repeated doses[1]

Infrequent: laryngospasm (during light anaesthesia), pain at injection site[1]

Rare: anaphylaxis, bronchospasm[1]

STORAGE

- Vial: Store below 25°C[3]

INTERACTIONS

This medication may interact with other medications; consult PCH approved references (e.g. Clinical Pharmacology), a clinical pharmacist or PCH Medicines Information Service on extension 63546 for more information.

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

Related CAHS internal policies, procedures and guidelines

High Risk Medicines

References

1. AMH Australian Medicines Handbook Pty Ltd. Thiopental. Australian Medicines Handbook [Online]: Australian Medicines Handbook Pty Ltd. Accessed December 12,2024. https://amhonline-amh-net-au.pklibresources.health.wa.gov.au/chapters/anaesthetics/general-anaesthetics/iv-general-anaesthetics/thiopental?menu=hints
2. British National Formulary for Children. Thiopental Sodium. BMJ Publishing Group Ltd. Accessed December 12, 2024. https://www-medicinescomplete-com.pklibresources.health.wa.gov.au/#/content/bnfc/_594878774?hspl=Thiopental%20sodium
3. MIMS Online Australia. Thiopental sodium. UBM Medica Australia Pty Ltd. Accessed December 12, 2024. https://www-mimsonline-com-au.pklibresources.health.wa.gov.au/Search/FullPI.aspx?ModuleName=Product%20Info&searchKeyword=thiopental&PreviousPage=~/Search/QuickSearch.aspx&SearchType=&ID=1900002_2
4. STAT!Ref Online Electronic Medical Library. Thiopental sodium. Merative 2024. Accessed December 12,2024.https://onlinestatrefcom.pklibresources.health.wa.gov.au/document/mflyiYcnmsjAoh9kmP83t?searchid=1737091280821011390&categoryType=All
5. Micromedex. Thiopental. Merative US LP. Accessed January 16, 2025. https://www-micromedexsolutionscom.pklibresources.health.wa.gov.au/micromedex2/librarian/PFDefaultActionId/evidencexpert.DoIntegratedSearch?navitem=topHome&isToolPage=true#
6. The Society of Hospital Pharmacists of Australia. Thiopental Sodium. Australian Injectable Drugs Handbook [Online]. Accessed January 2,2025. https://aidh-hcn-com-au.pklibresources.health.wa.gov.au/browse/t/thiopental_sodium
7. The Royal Children's Hospital, Melbourne. Thiopental. Paediatric Injectable Guideline Online [Online]. Accessed January 2, 2025. https://pig-rch-org-au.pklibresources.health.wa.gov.au/monographs/thiopentone/
8. AusDI. Omegapharm Thiopental Sodium 470 mg Powder for Injection. Telstra Health [Online]. Accessed January 2, 2025. https://ausdi-hcn-com-au.pklibresources.health.wa.gov.au/productInformation.hcn?file=p03025

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