Directorate of Critical Care, Theatres and Anaesthetics
FOR ICU USE ONLY

THIOPENTAL SODIUM
(Thiopentone sodium)

NHS Lothian

<table>
<tr><td>PRESENTATION:</td><td>Vials containing 500mg powder thiopental sodium for reconstitution.</td></tr>
<tr><td>INDICATION:</td><td>Treatment of raised intracranial pressure (ICP) or refractory status epilepticus unresponsive to standard measures. Thiopental sodium is a general anaesthetic. Cerebral electrical activity and intracranial pressure should be monitored. The aim is to keep the patient at burst suppression.
Caution: thiopental to burst suppression and hypothermia should not be used concurrently in a traumatic brain injury patient. It may on rare occasions be considered in status epilepticus.</td></tr>
<tr><td>DOSE AND ADMINISTRATION:</td><td>ICU STANDARD INTRAVENOUS INFUSION
This is an unlicensed indication and should be commenced only after authorisation by a critical care consultant.

Reconstitute three 500mg vials of thiopental sodium, each with 20ml water for injections, giving 1500mg in 60ml – 25mg/ml

Commence the loading regime according to table below:
<table>
<tr><th rowspan="2">Ideal Body Weight (kg)</th><th colspan="3">LOADING DOSE
Thiopental sodium infusion rate (ml/hr)</th></tr>
<tr><th>Hour 1 (10mg/kg/hr)</th><th>Hour 2 (7mg/kg/hr)</th><th>Hour 3 (5mg/kg/hr)</th></tr>
<tr><td>40kg</td><td>16 ml/hr</td><td>11.2 ml/hr</td><td>8.0 ml/hr</td></tr>
<tr><td>50kg</td><td>20 ml/hr</td><td>14.0 ml/hr</td><td>10.0 ml/hr</td></tr>
<tr><td>60kg</td><td>24 ml/hr</td><td>16.8 ml/hr</td><td>12.0ml/hr</td></tr>
<tr><td>70kg</td><td>28 ml/hr</td><td>19.6 ml/hr</td><td>14.0ml/hr</td></tr>
<tr><td>80kg</td><td>32 ml/hr</td><td>22.4 ml/hr</td><td>16.0ml/hr</td></tr>
<tr><td>90kg</td><td>36 ml/hr</td><td>25.2 ml/hr</td><td>18.0ml/hr</td></tr>
<tr><td>100kg</td><td>40 ml/hr</td><td>28.0 ml/hr</td><td>20.0ml/hr</td></tr>
</table>
Titrate according to EEG. See Appendix 5 in Status Epilepticus guideline. Maximum infusion rate is 7mg/kg/hr.

Maintenance infusion rate:
<table>
<tr><th rowspan="2">Ideal Body Weight (kg)</th><th colspan="4">Thiopental sodium infusion rate (ml/hr)</th></tr>
<tr><th>4mg/kg/hr</th><th>5mg/kg/hr</th><th>6mg/kg/hr</th><th>7mg/kg/hr</th></tr>
<tr><td>40kg</td><td>6.4 ml/hr</td><td>8.0 ml/hr</td><td>9.6 ml/hr</td><td>11.2 ml/hr</td></tr>
<tr><td>50kg</td><td>8.0 ml/hr</td><td>10.0 ml/hr</td><td>12.0 ml/hr</td><td>14.0 ml/hr</td></tr>
<tr><td>60kg</td><td>9.6 ml/hr</td><td>12.0ml/hr</td><td>14.4 ml/hr</td><td>16.8 ml/hr</td></tr>
<tr><td>70kg</td><td>11.2 ml/hr</td><td>14.0ml/hr</td><td>16.8 ml/hr</td><td>19.6 ml/hr</td></tr>
<tr><td>80kg</td><td>12.8 ml/hr</td><td>16.0ml/hr</td><td>19.2 ml/hr</td><td>22.4 ml/hr</td></tr>
<tr><td>90kg</td><td>14.4 ml/hr</td><td>18.0ml/hr</td><td>21.6 ml/hr</td><td>25.2 ml/hr</td></tr>
<tr><td>100kg</td><td>16.0 ml/hr</td><td>20.0ml/hr</td><td>24.0 ml/hr</td><td>28.0 ml/hr</td></tr>
</table>
Once the EEG is isoelectric, reduce the infusion rate to the lowest dose that will maintain burst suppression.

Continue thiopental for 24-48 hours to achieve ICP control or burst suppression. If status epilepticus is refractory to treatment with thiopental sodium, then refer to the Critical Care Status Epilepticus guideline for further management.

Infuse thiopental sodium through a dedicated central venous catheter. Do not infuse with other drugs.</td></tr>
</table>

	***Serum potassium concentration may drop during thiopental sodium infusion. However, potassium replacement when infusing thiopental sodium can be dangerous. It can lead to serum potassium rebounding to dangerously high levels on stopping thiopental sodium. Therefore, it is generally unnecessary to replace potassium unless it falls below 3.0mmol/l, or unless the patient is symptomatic of hypokalaemia, e.g. arrhythmias. On ceasing thiopental sodium infusion, check serum potassium levels every 2 hours for the first 24 hours.**
CONCENTRATION:	25mg/ml
STABILITY:	Physically and chemically stable for 6 hours at room temperature.
ADDITIONAL INFORMATION:	See separate document on "Thiopentone levels" for advice on obtaining and interpreting levels.

References:

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3. Legriel S. Bedos J.P and Azoulay E. Managing Critically Ill Patients with Status Epilepticus. Yearbook of Intensive Care and Emergency Medicine 2008. Edited by J.L.Vincent.
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5. H Meierkord et al. 2010. EFNS Guideline on the management of status epilepticus in adults. European Journal of Neurology. Vol 17: 348-355
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