Interventions for raised ICP (from PICU guidelines for TBI)

First line

1. Ensure all the routine measures for TBI management are instituted (see PICU policies for TBI management (available on Intranet: PICU Clinical Guidelines ⇨ Neurology and Trauma ⇨)

2. **Neuromuscular blockade, Rocuronium 1 mg/kg bolus followed by standard infusion**

3. Drain CSF, 5 to 10 mls, if the patient has an EVD. Repeat as necessary

4. **3% Hypertonic saline bolus** (avoid if Serum Na > 160 mmols/l)

   2- 5 ml/kg over 5 minutes or as an infusion titrated between 0.1 to 1ml/kg/hr infusion to

   maintain ICP < 20 mm Hg

5. **Mannitol** 0.25 gr/kg over 20 min. Maximum 2 doses in a four hour period

6. **Mild hyperventilation:** PaCO2 4.0 to 4.5 kPa

Second Line

If the ICP cannot be reduced despite all first line interventions the following should be considered :

1. **Titrated hypothermia**.

   Decrease patient's core temperature by 10 C at a time and reassess.

   Limit hypothermia to 33-34^0 C

2. **Barbiturate coma.**

Thiopentone bolus followed by infusion to achieve a reduction in ICP. Use CFAM to monitor degree of EEG suppression. Consider reducing thiopentone dose if CFAM shows marked suppression (not greater than 10 seconds of suppression on raw EEG trace) –either prolonged suppression periods in burst- suppression pattern, or a 'flat' isoelectric EEG.

Development of fixed dilated pupils also suggests thiopentone toxicity

3. **Decompressive craniectomy**

4. Moderate/severe hyperventilation: PaCO2 <4.0 kPa