Therapeutic Intensity Levels (TILs)

Recording TILs in the HOBIT Trial

Rationale for recording TILs

Interpretation of ICP data without additional information on the **intensity of therapy directed at ICP/CPP** control is misleading

Positioning

Positioning		
Q01	Head elevation for ICP control	○ No ○ Yes
Q02	Nursed flat (180°) for CPP management	○ No ○ Yes

- Position: mark ‘yes’ if the patient was nursed with head elevation for ICP control or nursed flat 180º for CPP management.
- What if both were done in a day?
  - Only mark the position employed for the greatest part of the time period over which the TIL is assessed.

Sedation and neuromuscular blockade

Sedation and neuromuscular blockade			
Q03	Low dose sedation (as required for medical ventilation)	○ No	○ Yes
Q04	Higher dose sedation for ICP control (but not aiming for burst suppression)	○ No	○ Yes
Q05	Metabolic suppression for ICP with high-dose barbiturates or propofol	○ No	○ Yes
Q06	Neuromuscular blockade (paralysis)	○ No	○ Yes

What was the aim of sedation? Look in the notes/talk with a clinician if there is a recommendation or action plan to manage ICP by increasing sedation

Transient neuromuscular blockade provided as part of rapid sequence intubation (RSI) on day 1 is not the same as neuromuscular blockade (paralysis) performed to lower ICP. If the only neuromuscular blockade provided on a given day was given as part of RSI, select “NO”

CSF drainage

CSF drainage			
Q07	CSF drainage - low volume (less than 120 mL/day or less than 5 mL/hour)	○ No	○ Yes
Q08	CSF drainage - high volume (greater than or equal to 120 mL/day or greater than or equal to 5mL/hour)	○ No	○ Yes

The volume of CSF drainage/day should be calculated based on the total amount of CSF drained on a given study day.

CPP management

CPP management			
Q09	Fluid loading for maintenance of cerebral perfusion	○ No	○ Yes
Q10	Vasopressor therapy required for management of cerebral perfusion	○ No	○ Yes

Is the therapy aimed at increasing CPP - for the most part this will be a yes.

For Q09: Looking for: fluid bolus, normal saline, and lactated ringer solution

Not looking for: maintenance fluids

Ventilatory Management

Ventilatory management			
Q11	Mild hypocapnia for ICP control ($PaCO_2$ 4.6 to 5.3 kPa [35, less than 40 mmHg])	○ No	○ Yes
Q12	Moderate hypocapnia for ICP control ($PaCO_2$ greater than or equal to 4 kPa [30 mmHg])	○ No	○ Yes
Q13	Intensive hypocapnia for ICP control ($PaCO_2$ less than 4 kPa [30 mmHg])	○ No	○ Yes

Use ABGs only

Inadvertent hypocapnia should not be interpreted assigned high TILs unless ICP was elevated

To evaluate for hypocapnia, use the lowest PaCO2 recorded from arterial gas measurements on a given day.

Hyperosmolar therapy

Hyperosmolar therapy			
Q14	Hyperosmolar therapy with mannitol less than or equal to 2 g/kg over 24 hours	○ No	○ Yes
Q15	Hyperosmolar therapy with hypertonic saline less than or equal to 0.3 g/kg over 24 hours	○ No	○ Yes
Q16	Hyperosmolar therapy with mannitol greater than 2 g/kg over 24 hours	○ No	○ Yes
Q17	Hyperosmolar therapy with hypertonic saline greater than 0.3 g/kg over 24 hours	○ No	○ Yes

As with every other therapy, the total volume of hyperosmolar therapy administered over 24 hours should be based on the amount administered between 00:00 and 23:59 on that day.

What if you used different concentrations of hypertonic saline? There is a calculator for calculating the total amount. See page 24 of MOP

https://docs.google.com/spreadsheets/d/1yqt_biBvIAhPG0ZhvQtua0BuDx80XvZraHeznkAGSwo/edit#gid=1391341219

Temperature control

Temperature control			
Q18	Treatment of fever (T greater than 38°C) or spontaneous temperature of 34.5°C	○ No	○ Yes
Q19	Mild hypothermia for ICP control where temperature is greater than or equal to 35°C	○ No	○ Yes
Q20	Hypothermia below 35°C	○ No	○ Yes

The key to answering Q19 and 20 is whether hypothermia was introduced intentionally/purposefully to control ICP. Therefore the ICP should have been elevated and the patient was cooled to below 35C to treat the ICP. If this did not happen and the temperature dropped spontaneously, then the answer should be NO.

Surgery for intracranial hypertension

Surgery for intracranial hypertension			
Q21	Intracranial operation for progressive mass lesion, NOT scheduled on admission	○ No	○ Yes
Q22	Decompressive craniectomy	○ No	○ Yes

Surgery that was planned at the time of enrollment does not count.

If a subject had a craniectomy on day 2 (for example), you would select “yes” to Q22 on days 2-5.