



## Sugar or Salt (SOS) Trial:

### Hyperosmolar therapy in traumatic brain injury

ICU admission  
following severe  
TBI

#### SEVERE TRAUMATIC BRAIN INJURY

Screen for eligibility/consent  
(see separate flow sheet)

#### Stage 1 measures (as per local protocol):

Head of bed elevated to 30 degrees  
Avoid venous congestion/remove cervical collar if possible  
Optimise sedation/analgesia (target RASS -5)  
Muscle paralysis to prevent coughing  
PaO<sub>2</sub> >10-12kPa/SpO<sub>2</sub> 94-98%  
PaCO<sub>2</sub> 4.5-5kPa  
Measure CPP with arterial transducer zeroed at the ear  
Target CPP 60-70mmHg  
MAP maintained at > 80mmHg  
Target normoglycaemia  
Consider anticonvulsant therapy

#### Stage 1 options:

Target PaCO<sub>2</sub> 4-4.5kPa  
Treat hyperthermia >38°C with targeted temperature management (TTM)  
Ventriculostomy with or without CSF drainage  
Surgical removal of space occupying lesions

Randomisation  
Intervention

ICP > 20mmHg for 5 minutes within 10 days of injury  
(Despite optimised stage 1 measures as above)

#### RANDOMISATION

##### Mannitol

Continue Stage 1 measures  
Add bolus 2ml/kg mannitol 20%

Repeat boluses if ICP > 20 until  
serum Na > 155

##### Hypertonic Saline

Continue Stage 1 measures  
Bolus 2ml/kg HTS (or osmolar dose)

Repeat boluses if ICP > 20 until  
serum Na > 155

FURTHER MEDICAL TREATMENT AT CLINICIAN DISCRETION  
IF ICP REMAINS > 20 UNTIL Na > 155

#### Stage 3 measures (as per local protocol) e.g.:

Continued medical care  
Barbiturate infusion  
Therapeutic hypothermia  
Consider decompressive craniectomy





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