WYCCN TRANSFER CHECKLIST FOR ISOLATED BRAIN INJURED PATIENTS

Time Critical Transfers for Life saving Neurosurgical or Neuroradiological Interventions

This form is to be used in conjunction with the WYCCN interhospital transfer form to provide advice on the safe transfer of brain injured patients. If in doubt about any aspect of the transfer, please contact Neuroanaesthetic / Neurosurgical Team at LTHT for advice (see below)

AIRWAY

Ensure the following are documented in the patient record
- ETT size and length at lips:
- Grade of laryngoscopy / adjuncts used

Is the ETT taped? (avoid tie if possible)
Is C-spine immobilisation required?

BREATHING

Controlled IPPV (6-8mls/kg tidal volume)
Oxygenation targets (see ventilation strategy)
$PaCO_2$ 4.5-5kPa (calibrated to $ETCO_2$)
A $PaCO_2$ of ..... equates to an $ETCO_2$ of .....

CIRCULATION

Arterial Line sited (don't delay transfer if unable)
2 x IV access available and working
SBP target identified (see SBP Target Range)
Vasopressors available
Fluids available / required?
Bleeding controlled / haemorrhage plan

DISABILITY

Ensure the following are documented in the patient record
- GCS pre intubation
- Pupils (pre & post intubation / on departure / on arrival)

Ensure adequate sedation (propofol & opioid)
Ensure fully paralysed
Raised ICP plan identified – osmotherapy drugs available
Seizure plan identified

EXPOSURE

Aim normothermic 36-37°C
Maintain Glucose 6-10mmol/L
30° head up (if no contraindications)
NG position confirmed (if in-situ) & documented in the patient record
5-point harness
Catheterised

THINGS TO AVOID

- Delaying a time critical transfer for unnecessary investigations or interventions
- Hyperventilating to a $PaCO_2$ <4kPa
- Active cooling to < 35°C
- Steroids

NEURO DRUG FORMULARY

Scan QR code to view a formulary for drugs useful during transfer of brain injured patients

COMMUNICATIONS

Neurosurgery SpR	07979 928120
Neuro ICU (L03)	0113 392 7403
Neuro acute theatre (Theatre 5 Jubilee)	0113 392 5305
LTHT switchboard	0113 243 2799
LGI ED Resus	0113 392 2125
Hull Royal Infirmary ICU	01482 467 4355
Royal Hallamshire ICU	0114 271 2437

West Yorkshire Critical Care Network

NEUROPROTECTIVE SPECIFICS

VENTILATION STRATEGY

	PaO_2 / SpO_2
Traumatic brain injury	≥ 13 kPa
Intracranial haemorrhage / haemorrhagic stroke	≥ 13 kPa
Acute ischaemic stroke	≥ 95%
Spontaneous subarachnoid haemorrhage	≥ 13 kPa

SYSTOLIC BLOOD PRESSURE TARGET RANGE

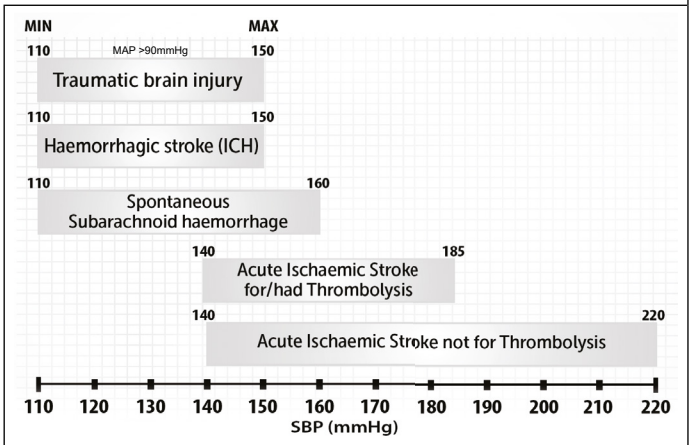

Chart courtesy of The South Yorkshire Neuro transfer checklist, Emma Temple et al.

BLOOD PRESSURE MANAGEMENT
(see neuroprotective specific target range)

Hypotension
- ☐ Ensure hypovolaemia corrected
- ☐ Check sedation not excessive
- ☐ Vasopressors (see neuro drug formulary)
  - ☐ Metaraminol infusion +/- boluses
  - ☐ Phenylephrine infusion +/- boluses
  - ☐ Noradrenaline infusion if CVC insitu

Hypertension
- ☐ Other signs of raised ICP? (see ICP guidance)
- ☐ Check adequately sedated
- ☐ Avoid fluid overload
- ☐ If severe hypertension consider Labetalol. 20mg over 1 minute. Repeated at 10 minute intervals. Max total dose 200mg. (See formulary for infusion information)

MANAGEMENT OF RAISED ICP
(in patients without ICP monitoring)

Presentation under general anaesthesia

(hypertension and bradycardia are not always signs of raised ICP, but deteriorating pupillary response is always a cause for concern)
- ☐ Hypertension
- ☐ Bradycardia
- ☐ Pupil asymmetry / dilatation / decreased reactivity

Treat
- ☐ Check oxygenation adequate
- ☐ Check sedation adequate
- ☐ Check paralysis
- ☐ Hyper ventilate aiming for $PaCO_2$ 4-4.5 kPa
- ☐ Osmotherapy given over 15 minutes, consider repeat
  - ☐ 10% Mannitol 0.5g/kg or 5mls/kg (350mls 10% if 70kg) or
  - ☐ 20% Mannitol 0.5g/kg or 2.5mls/kg (175mls 20% if 70kg) or
  - ☐ 2.7% Saline 3mls/kg or
  - ☐ 3% Saline 2mls/kg (see neuro formulary for how to make 3% from 30% saline)
- ☐ Update Neurosurgery registrar on 07979 928 120

SEIZURE MANAGEMENT

Levetiracetam (Keppra)	40mg/kg actual body weight over 15 mins (Max 4.5g)
Phenytoin	20mg/kg IBW over 1 hour (max 2g)

With thanks to Dr John Summers LTHT for the development of this form