

KIDS CLINICAL GUIDELINE – NEUROSURGICAL EMERGENCY TRANSFER

CONSIDER RAISED ICP → Reduced GCS, focal neurological deficit, unequal or dilated pupils, relative bradycardia & hypertension, seizures, abnormal posture

If present, commence resuscitation as below and inform anaesthetic team ASAP. Alert radiology of a patient requiring urgent CT brain. Call KIDS on 0300 200 1100 - A conference call will be set up with the KIDS Consultant, Neurosurgeons and other relevant parties. If head injury Activate Trauma Team where local provision exists.

Time critical emergencies will require a primary transfer by the referring team!

INITIAL ASSESSMENT AND MANAGEMENT	INITIAL ASSESSMENT AND MANAGEMENT	ACUTELY RAISED ICP - EMERGENCY TREATMENT								
<p>AIRWAY & BREATHING (AVOID HYPOXIA!)</p> <ul style="list-style-type: none"> - Assess and maintain airway patency - Seek senior anaesthetic support early - Assess adequacy of ventilation and support with bag & mask if necessary <p>Criteria for intubation:</p> <ul style="list-style-type: none"> - Loss of airway reflexes - GCS ≤ 8 - Signs of raised ICP – ‘Blown’ pupil, ↑BP ↓HR - Respiratory insufficiency or spontaneous hyperventilation (CO₂ ≤ 3.5) <p>TRAUMA PATIENTS REQUIRE CONTINUOUS C-SPINE IMMOBILISATION (Do not use cervical collars!)</p> <p>POST – INTUBATION:</p> <ul style="list-style-type: none"> - Secure ET tube using tapes (click for description) - Sedate and paralyse with Morphine, Midazolam (>6 months) and Rocuronium – see calculator - Ensure PaCO₂ 4.5-5.0 kPa & PaO₂ 10-12kPa - Monitor End-Tidal CO₂ - - Keep PEEP at 5cm H₂O where possible - Maintain 30° head up tilt - PERFORM URGENT CT BRAIN and discuss result 	<p>CIRCULATION (AVOID HYPOTENSION!)</p> <ul style="list-style-type: none"> - Continuous ECG and SpO₂ monitoring - Cycle NIBP every at least every 3 minutes - Insert IV access x 2 - Consider invasive BP monitoring - Do not delay CT to insert lines <p>Use mean arterial pressure targets as shown below:</p> <table border="1" style="margin: 10px auto; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #cccccc;"> <th>AGE</th> <th>TARGET MBP</th> </tr> </thead> <tbody> <tr> <td><2</td> <td>60-65 mmHg</td> </tr> <tr> <td>2-6</td> <td>70-75 mmHg</td> </tr> <tr> <td>>6</td> <td>80-85 mmHg</td> </tr> </tbody> </table> <p>Fluid boluses: 10 mls/kg 0.9% Saline</p> <p>Inotropes may be needed to maintain MAP – seek KIDS advice.</p> <p>Bleeding trauma patients require blood products – see guidance</p> <p style="text-align: center;">DISABILITY & EXPOSURE</p> <ul style="list-style-type: none"> - Perform 15 minute neurological observations - Maintain normothermia and normoglycaemia - Keep Hb > 10g/dL and correct coagulopathy - Give phenytoin 20 mg/kg - If open fracture, give IV antibiotics 	AGE	TARGET MBP	<2	60-65 mmHg	2-6	70-75 mmHg	>6	80-85 mmHg	<p>(e.g. unequal or dilated unreactive pupil, ↑BP ↓HR)</p> <ul style="list-style-type: none"> - Ensure all routine measures as opposite are instituted (e.g. well sedated, 30° head up) - Give osmotherapy: <ul style="list-style-type: none"> o 3 mls/kg of 3% Saline or o 2.5 mls/kg of 20% Mannitol over 15 mins
AGE	TARGET MBP									
<2	60-65 mmHg									
2-6	70-75 mmHg									
>6	80-85 mmHg									
		<p>PREPARATION FOR TRANSFER CHECKLIST</p> <ul style="list-style-type: none"> <input type="checkbox"/> Emergency airway equipment inc. AmbuBag <input type="checkbox"/> Secure IV access x2 with long extension connected to allow fluid / drug administration <input type="checkbox"/> Sufficient volumes of infusion drugs and rates checked <input type="checkbox"/> Emergency drugs including osmotherapy <input type="checkbox"/> Sufficient portable O₂ for whole journey x2 <input type="checkbox"/> Sufficient battery life on monitor and infusion pumps <input type="checkbox"/> Case notes, blood results, observation and prescription charts photocopied <input type="checkbox"/> Images sent to receiving unit via PACS <input type="checkbox"/> Satisfactory restraint (protect C-spine!) <input type="checkbox"/> Receiving unit notified of departure 								