Publication:
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Document purpose: This document contains overarching principles of practice and governance to all acute receiving hospitals in the Midlands Trauma Networks.
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Purpose. To provide overarching principles of practice and governance to all acute referring and receiving hospitals in the Midlands Trauma Networks.

Scope of document. Limited to providing guidance for the management for patients with suspected significant head injury, to ensure correct initial management and appropriate onward referral if necessary

Introduction. Traumatic brain injury is the commonest cause of death and disability in people aged 1–40 years in the UK. Each year, 1.4 million people attend emergency departments in England and Wales with a recent head injury, and about 200,000 a year are admitted to hospital with traumatic brain injury. Of these, one-fifth have features suggesting skull fracture or have evidence of brain damage. Early diagnosis and specialist management is essential to minimise disability and mortality from traumatic brain injury.

Principles

- Patients who have sustained a head injury should be transported to the most appropriate hospital according to the pre-hospital major trauma triage tool.

- Patients should be considered for imaging in line with current NICE guidance “Head injury: assessment and early management” NG232.

- Regional trauma networks must ensure there are pathways in place for patients with isolated brain injury to receive immediate and urgent neurosurgical advice from the MTC without delay. Patients with polytrauma and TBI would normally be referred directly to the Trauma Team Leader (TTL) of the MTC. Patients with isolated head injury would normally be discussed directly with the MTC neurosurgical team. For patients with isolated head injury, when there is difficulty or delays accessing neurosurgical expertise then the TTL of the MTC should be contacted for support to avoid delays in transfer.

- There should be a designated Consultant in each referring hospital and MTC with overall responsibility for the organisation, infrastructure and processes to enable safe transfer of patients with a brain injury, and to ensure adherence to the AAGBI national transfer guideline.

- Patients aged 16 years and over should be referred to the adult MTC’s at UHNM, UHCW or UHB. Patients aged under 16 years should be referred to the paediatric MTC’s at BCH or Alder Hey.

- Referring hospitals should ensure a full history is available in order for the MTC to make patient-centered decisions around transfer. This includes the presence of terminal illness, major comorbidities including advanced dementia, the current Clinical Frailty Scale score and the functional status of the patient.

Inclusion criteria for TTL to TTL transfer

- Aged 16 and over to adult MTC: UHNM, UHCW, QEHB.
- Aged under 16 to paediatric MTC: BCH or Alder Hey for patients North of UHNM or North Wales.

CT shows severe traumatic brain injury, and any of the following:

- GCS less than or equal to 8
- Deteriorating GCS (drop of 2 points or more on GCS)
- Focal neurological signs
- Penetrating head injury

Exclusion criteria for TTL to TTL transfer

Patients with any of the following ***MUST*** be discussed with the receiving Neurosurgical service prior to transfer:

- Terminal illness or major co-morbidity (e.g. advanced dementia)
- Patients over 65 years with Clinical Frailty Score >6
- Bilateral fixed dilated pupils

Recommendations

- In line with recent coroner recommendations and the national critical care networks medical leads group, critical care bed availability should not be a prerequisite for transfer if the patient requires time critical neurosurgical intervention.

- If the MTC TTL needs to discuss a patient with the neurosurgeons prior to transfer, they should understand the local process/facilities available in order to expedite a quick decision (within 30 minutes of first referral).

- Patients with a Glasgow Coma Scale (GCS) ≤ 8, a significantly deteriorating conscious level, for example, a fall in GCS of two points or more, or a fall in motor score of one point or more, and requiring transfer should undergo tracheal intubation and mechanical lung ventilation.

- Patients with a brain injury should be accompanied by a clinician with appropriate training and experience in the transfer of patients with acute brain injury

- All patients with evidence of head injury and a GCS 12 or less OR CT evidence of intracranial haemorrhage should receive TXA within 3 hours of injury as per CRASH-3 recommendations.

- All patients with traumatic intracranial haemorrhage who are on anticoagulant medication should be considered for immediate reversal of anticoagulation. Every hospital should have rapid access to haematology advice, clinical guidelines and reversal agents for this situation.

References

NICE Head injury: assessment and early management NG 232, May 2023
https://www.nice.org.uk/guidance/ng232

AAGBI Safe Transfer of the brain-injured patient: trauma and stroke 2019
https://anaesthetists.org/Home/Resources-publications/Guidelines/Safe-transfer-of-the-brain-injured-patient-trauma-and-stroke-2019

Regulation 28 Coroners report, January 2017

National Critical Care Networks Regulation 28, Memorandum of Understanding, May 2018

The CRASH-3 trial collaborators. Effects of tranexamic acid on death, disability, vascular occlusive events and other morbidities in patients with acute traumatic brain injury (CRASH-3): a randomised, placebo-controlled trial. *Lancet.* 2019; 394: 1713-1723