ADULT HEPATOLOGY PATIENTS WITH ACTUAL OR SUSPECTED HEAD INJURY POST FALL - ASSESSMENT & MANAGEMENT

Is the patient stable?
Assess ABCDE

NO → **Call 2222 or 3333**

YES ↓

Check BEFORE moving off floor: *Are there any signs or symptoms of injury?*

Spinal injury
e.g. struck spine or neck, pins & needles, tingling, numbness, weakness, back or neck pain, loss of sensation
HOLD PATIENT STILL

Fracture injury
e.g. limb or hip pain, limb deformity loss of sensation, numbness, weakness

Head injury
e.g. struck head or face, lumps, grazes or lacerations on scalp or face, black eye, nosebleed, vomiting, reduced consciousness or new confusion. NB head injury may mask spinal injury

Any other significant injury
e.g. haemorrhage, large skin tears or lacerations. Is the patient coagulopathic or on anticoagulants?

Only minor injury
e.g. graze, bruises

No signs of injury

Spinal / Fracture / Head / Any other significant injury ↓

Call a doctor immediately & consider pain relief
(but be aware pain relief may mask symptoms of fracture)

Spinal / Fracture injury ↓

IMMOBILISE SPINE AND/OR LIMB AND USE FLAT-LIFTING EQUIPMENT ONLY-i.e. SCOOP/SPINAL BOARD

Head / Any other significant injury / Only minor injury / No signs of injury ↓

Retrieve patient from floor using appropriate manual handling methods.

Only minor injury / No signs of injury ↓

Contact doctor, request medical review within 4 hours from time of fall. Nurse to re review patient hourly until medical assessment completed →

Are there EITHER signs of head injury as above OR was there no reliable witness to the fall?

YES, there are indications of head injury

There are no indications of head injury, but there was NO RELIABLE WITNESS to the fall

There is a reliable witness to the fall who can confirm the patient DID NOT strike their head

YES / NO RELIABLE WITNESS ↓

Take and act on neurological observations. Refer to Neuro obs chart for guidance on frequency of obs. (as per NPSA guidance) →

Reliable witness ↓

Consider how best to prevent the patient falling again (refer to local Fall Prevention Policy)
Review manual handling & falls careplan.
Report the fall on Datix. Inform relatives if appropriate

Patients should be assessed by the duty doctor urgently (within 15 minutes) if initial GCS < 15 or any of the following:

- Agitation / change in behaviour.
- GCS falls by 3 points (eyes / verbal) or 2 points (motor).
- Any other fall in GCS if sustained for 30 minutes or more.
- Persistent vomiting or severe headache.

Note: GCS 14/15 (E4 V4 M6) post fall is acceptable in patients who are normally confused with no change in usual behaviour.

The duty of the attending medical doctor is to assess the patient for:

- Medical stability (starting with ABC).
- Need for immobilisation of cervical spine (if GCS<15 on initial assessment, neck pain/tenderness, focal neurological deficit or paraesthesia in extremities). If advice /equipment required for immobilisation, contact the Neurosurgical ward or ED.
- Acute injury sustained during the fall, including the severity of head injury, need for urgent CT brain scan +/- C-spine imaging; and any other injuries that may have occurred e.g. hip fracture.
- Brief consideration of the circumstances and cause for fall, including consideration that the fall may have been due to an acute illness.
- Review drug chart and discontinue any medications that may increase falls risk (e.g. antihypertensives).
- Stop all anticoagulant/antiplatelet therapy in **all** liver patients (e.g. acute liver failure, acute alcoholic hepatitis, decompensated cirrhosis) with coagulopathy (low platelets/prolonged prothrombin time), including DVT prophylaxis.
- Complete falls assessment sticker and document assessment in the medical notes.

ASSESSMENT OF HEAD INJURY

Immediate CT brain scan is indicated if any of the following are present:

- GCS less than 13 on initial assessment.
- GCS less than 15 at 2 hours after the injury.
- Suspected open or depressed skull fracture.
- Any sign of basal skull fracture (haemotympanum, 'panda' eyes, cerebrospinal fluid leakage from the ear or nose, Battle's sign).
- Post-traumatic seizure.
- Focal neurological deficit.
- More than 1 episode of vomiting.

CT scan within 8 hours is indicated for LOC / some amnesia *plus* either:

- Age ≥ 65 years.
- History of bleeding disorder and/or liver disease related coagulopathy.
- Dangerous mechanism of injury (fall from >1m or 5 stairs).

Patients on antiplatelet/anticoagulation therapy (including DVT prophylaxis) and/or with liver disease related coagulopathy should have a CT scan within 8 hours of the head injury even if there is no other indication for imaging:

- If there is a strong suspicion of intracranial bleed in a patient on warfarin anticoagulation should be reversed immediately (before CT) – contact on call Haematologist for advice.

- If there is a strong suspicion of intracranial bleed in a patient on a NOAC (Novel Oral AntiCoagulants - abigatran, rivaroxaban, apixaban and edoxaban) contact on call Haematologist for advice.
- **Stop** all anticoagulant/antiplatelet therapy in **all** liver patients (e.g. acute liver failure, acute alcoholic hepatitis, decompensated cirrhosis) with coagulopathy (low platelets/prolonged prothrombin time), including DVT prophylaxis. Please prescribe TED stockings as alternative DVT prophylaxis.

ASSESSMENT OF CERVICAL SPINE INJURY

CT Cervical Spine is indicated if any of the following are present:

- GCS <13 on initial assessment.
- Patient intubated.
- Patient having other body areas scanned (head injury/ multiple trauma).
- Clinical suspicion of cervical spine injury and **one** of the following:
  - Age >65yrs with new neck pain post trauma.
  - Dangerous mechanism of injury.
  - Parasthesia in limbs or other focal peripheral deficit.
  - Significant facial or occipital bruising.
  - Distracting injury elsewhere.
  - Persistent pain for >48hrs even if previous XR normal.
  - C-spine XR technically inadequate or suspicious or abnormal.

If CT not indicated and **any** of the following is present:

- Patient is sitting comfortably *or*
- Patient has walked since injury *or*
- Patient has no midline cervical tenderness *or*
- Delayed onset of neck pain.

Then assess clinically whether patient is able to rotate neck 45 degrees left & right
- if able to do so, no imaging needed.
- If **not** able, need CT C-spine if >65yrs, or C-spine XR (AP, lateral & PEG) in younger pts.

Immobilisation of C-Spine should continue until assessment and/or imaging complete.

AFTER CARE

All CT scans should be reported within 1 hour of imaging and results acted upon appropriately.

If there is an intracranial bleed:

- Contact on call neurosurgeon immediately for advice.
- Continue neuro obs as per chart guidelines/advice from neurosurgery.
- Reverse coagulopathy- 3 days iv vitamin K 10mg **plus** contact on call haematologist for advice re: platelet and FFP infusions.
- Confirm all anticoagulant/antiplatelet therapy, including DVT prophylaxis, has been discontinued on the drug chart. Please prescribe TED stockings as alternative DVT prophylaxis.

All C-spine injuries should be discussed with the on call neurosurgeon.

Reassess falls risk:

- Full falls assessment with input from falls team.
- Move patient to bed space closer to nursing station/area of close observation. If patients are on an outlier ward, update pull list to prioritise transfer to Marlborough ward.
- Full review of drug chart on consultant ward round- potential drug causes, reassess need for anticoagulant/antiplatelet therapy, including DVT prophylaxis.
- Review DVT prophylaxis 48 hours post fall on consultant ward round. Repeat CT scan prior to restarting anticoagulants (including DVT prophylaxis) is recommended in cases of intracranial haemorrhage (exclude bleed extension).

References/ source documents

1. National Patient Safety Agency (January 2011) Rapid Response Report NPSA/2011/RRR001: Essential Care After an Inpatient Fall.

2. NICE (Jan 2014) Clinical Guideline 176: Head Injury: Triage, assessment, investigation and early management of head injury in infants, children and adults.

3. The Canadian C-spine rule for radiography in alert & stable trauma patients. Stiell IG *et al.* JAMA. October 2001 17;286(15):1841-8.

4. NICE (November 2015) Clinical Guideline NG24: Blood transfusion.

5. Head injuries and cirrhosis: does everyone need a CT scan? Godfrey B *et al.* Journal of Urgent Care Medicine. June 2018.

6. James Paget University Hospital and Norfolk & Norwich University Hospital Joint Trust Guideline (December 2015): The Assessment and Management of Adults (Following a Fall) With Actual or Suspected Head Injury. R Rallan and J Wimperis.

Trust Guidelines	University Hospitals Plymouth NHS Trust

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Accountabilities	
Author	Dr Aileen Smith, Consultant Hepatologist
Reviewed by (Group)	Hepatology Clinical Governance Meeting
Approved by (Lead)	Dr Aileen Smith, Consultant Hepatologist

Links to other documents

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