GUIDELINE: Head Injuries in Neonates on the Postnatal Ward or NICU

Reference: Head injuries after fall
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Applicable to: Neonates admitted to the postnatal ward or NICU

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Disclaimer:

These guidelines have been ratified at the Neonatal Guideline Meeting; however clinical guidelines are guidelines only. The interpretation and application of clinical guidelines will remain the responsibility of the individual clinician. If in doubt contact a senior colleague or expert. Caution is advised when using guidelines after the review date.

S.Lloyd, L.Perkins & E.Smit (March 2018 – to be reviewed March 2021)
Head Injuries in Neonates on the Postnatal Ward or NICU

Infants who fall on the postnatal ward or NICU are at risk of sustaining a significant head injury. This guideline should be used to guide appropriate assessment, management and follow-up of these infants.

Identifying infants at high risk of falls:

For advice on prevention of falls please read midwifery prevention guides (‘Babies don’t bounce’)

Identifying infants at high risk of falls:

Box 1: High risk patients:

1. GA/Epidural/Spinal anaesthesia for delivery
2. Primiparous mother
3. Breastfeeding in bed
4. Night-time (between the hours of midnight and 8am).
5. Sedative maternal medication.

Box 2: Signs and symptoms suggestive of intra-cranial injury:

1. Loss of consciousness
2. More than 3 discrete episodes of vomiting
3. Poor feeding
4. Irritability/drowsiness
5. Abnormal movements/seizures including apnoea/dusky episodes
6. Significant swelling or bruising (not present prior to fall)

Box 3: Examination of patient after head injury:

1. External injuries (document dimensions)
2. Head circumference
3. Fontanelle
4. Pupillary reflexes
5. Tone
6. Power
7. Reflexes (including Moro, suck, rooting, palmar and plantar)

If an infant falls on the postnatal ward maternity staff should ensure the neonatal team is called to review as soon as they have attended to the mother and infant. If the infant is unresponsive or appears to be having a seizure a “neonatal crash call”, should be put out via switchboard (2222).

Initial Assessment:

When informed of an infant ‘fall’ on postnatal ward:

1. Review urgently (within 1 hour and discuss with registrar)
2. Document time of incident
3. Document details of how incident occurred including an estimate of height fallen
4. Make note of any risk factors (see box 1)
5. Ask about symptoms or signs suggestive of intracranial injury (see box 2)
6. Examine patient thoroughly for injury including a full neurological examination (see box 3)
7. Record any social concerns which may need discussion with social services prior to discharge
Management (see flow chart):

1. Commence neuro-observations immediately and perform hourly. Observations to be performed by neonatal nursing team. Aim to keep the baby on the postnatal ward, but may need admission to NICU if not possible to do observations on the postnatal ward (to be decided case by case). Any abnormal neurological observation should trigger informing the neonatal on-call team immediately.

2. Consider the need for analgesia

3. If concerns, consider performing a cranial ultrasound, specifically looking for midline shift and intracranial haemorrhage.

4. Assess whether a CT head is indicated (instigate early discussion with the neurosurgical team if focal neurological signs) – see Box 4

5. Admit to NICU if any worrying signs or symptoms of intracranial injury or if abnormalities are identified on imaging.

6. All incidents of infant ‘falls’ on the postnatal ward should be discussed with the neonatal consultant on call.

7. Always give advice on preventing further falls as per the ‘Babies don’t bounce’ guidance.

8. Ensure that a DATIX incident report is completed.

9. Inform safeguarding team of all cases of infant falls. If there are any social concerns discuss with social services prior to discharge.

**Box 4: Indications for CT imaging**¹²³:

**Absolute indications:**

1. Seizure/s
2. Focal neurological deficit
3. Loss of consciousness or unresponsive episodes
4. Any soft tissue injury (bruise, swelling or laceration)¹ - not present prior to fall
5. Suspicion of non-accidental injury
6. Suspected open or depressed skull fracture
7. Tense/bulging fontanelle.
8. Any sign of basal skull fracture (haemotympanum, 'panda' eyes, cerebrospinal fluid leakage from the ear or nose, Battle's sign).
9. Strong suspicion of bleed on Cranial USS

**Relative indications (urgent review and consider CT):**

1. Vomiting ≥ 3 episodes
2. Abnormal drowsiness or irritability
3. Fall from height ≥ 1 m

*If CT imaging is indicated this should be performed within 1 hour²*
Follow-up:

1. Ensure a full discharge summary is sent to all professionals involved, GP, and health visitor.
2. All infants who have abnormalities on CT head imaging should have:
   - Head circumference monitored regularly in the community
   - Named neonatal consultant follow-up to monitor progress and neurodevelopment
3. Neurosurgical follow-up should be as per the advice of the neurosurgical team

Key points:

1. Infant ‘falls’ can result in significant head injury with subtle or even absent clinical signs in some cases
2. All patients who fall on the postnatal ward should be discussed with the consultant Neonatologist on call
3. If CT imaging is indicated this should be performed within 1 hour
4. Clinicians should have a low threshold for requesting CT head examination for children under 1 year of age with any size of swelling, haematoma, or laceration following head injury
5. All infants who have abnormality on CT imaging should have neonatal follow-up to monitor neurodevelopment. They will also require close monitoring of the head circumference following discharge.

References:

Flow chart Management of neonatal head injuries

Infant fall on postnatal ward


Absolute indication for CT head (see box 4)

- **YES**
  - Request URGENT CT head **(within 1 hour)**
    - CT abnormal
      - Discuss with on-call neurosurgical registrar urgently. Inform consultant Neonatologist.
    - CT normal
      - 24 hour period of observation and senior review before discharge
      - Consultant decision regarding when fit for discharge and whether follow-up is required

- **NO**
  - Discuss with neonatal consultant on call including need for CT head

Inform safeguarding team of all cases of infant falls. If any social concerns discuss with social services prior to discharge.

Home
Ensure Datix completed prior to discharge

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