

Background

- Neuroimaging of the head and neck forms one of the key investigations to guide the diagnosis, management and prognosis of head injuries.
- Head Injury, defined as any kind of trauma to the head apart from injuries to face, is recognised as the commonest cause of death in people less than 40 years of age in the UK.
- As a result, there exists clear guidance from the National Institute of Health & Clinical Excellence (NICE - CG176)¹ for the management of Head Trauma.
- This study evaluated whether patient presented to ED where assessed and performed CT Head according to National recommend Guidelines.

Set Standards

- Criteria 1**
 - All patients presenting to ED has to be assessed by a trained member of staff for Non-accidental Injury and Domestic Violence.
 - Criteria 2**
 - Patients presenting to ED has to be triaged within 15minutes of arrival
 - CT Spine to be assessed in triage
 - Criteria 3 – 9**
 - Risk Factors to be assessed in patients with Head Injury and preformed CT Imaging when required as per each of the criteria.
 - Criteria 10**
 - All patients needing Admission/Observation to be admitted under a team led by a consultant.
 - Criteria 11**
 - Patients discharged from hospital have to be given written and verbal advice
- If any of the above risk factors are identified in a patient with Head Trauma, CT Imaging has to be performed within 1 hour of the assessment/ within 8 hours for criteria 8. A formal radiology report has to be available within 1 hours of Scan being performed.

Aim

- To assess whether the current practice of The Hillingdon Hospital Emergency Department is in accordance with the recommended national guidelines (CG176) in the management of patients presenting with a Head Injury with regards to assessment and requesting CT imaging.

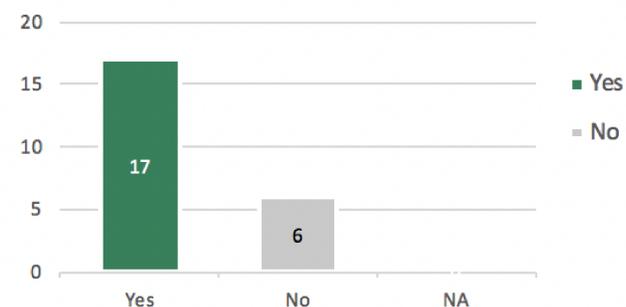
Methods

- A retrospective observational study was carried out looking at patients attending the Emergency Department in September 2017, with a suspected head injury.
- 94 patients (64 adult and 27 children) had their notes and documentation assessed for compliance to the NICE Guideline (CG176) when requesting for CT Imaging.

Results

	Yes		No		NA		Total No. of Patients
	No.	%	No.	%	No.	%	
Triage	94	100%	0	0%	0	0%	94
Assessed within 15 minutes of arrival	42	45%	52	55%	0	0%	94
Assessed for Non-Accidental injury/Domestic Violence	15	16%	0	0%	79	84%	94
Assessed for C-spine in triage	17	18%	77	82%	0	0%	94
GCS calculated	81	86%	13	14%	0	0%	94
Assessed for Depressed Skull #	71	76%	23	24%	0	0%	94
Checked for signs of Basal skull #	25	27%	69	73%	0	0%	94
Asked no. of episodes of vomiting	80	85%	14	15%	0	0%	94
Assessed Fits/Seizures	18	19%	76	81%	0	0%	94
Mechanism of injury elicited	88	94%	6	6%	0	0%	94
Asked about LOC	80	85%	14	15%	0	0%	94
Assessed Amnesia	26	28%	55	59%	13	14%	94
Assessed Hx of bleeding/clotting disorders	86	91%	8	7%	0	0%	94
Checked if pt. is on Warfarin	83	88%	11	12%	0	0%	94
Full Neurological Examination	69	73%	25	27%	0	0%	94
C-Spine Examination	39	41%	53	56%	2	2%	94
Discharge Advice Given	63	67%	11	12%	20	21%	94
Head Injury Leaflet Given	27	29%	39	41%	28	30%	94
CT Scan in compliance with guidelines*	18	74%	6	26%	0	0%	23*

CT Scan in compliance with guidelines



Out of 94 Patients 23 had CT Imaging of Head/C-Spine:

- 17 (74%) met the criteria of NICE Guidelines, while 6 (26%) did not meet the criteria and were scanned for various reasons (intoxicated patient, difficult history, more than 2 episodes of LOC, prolonged headache, amnesia & blurring of vision). All these scans were reported normal.

Conclusion

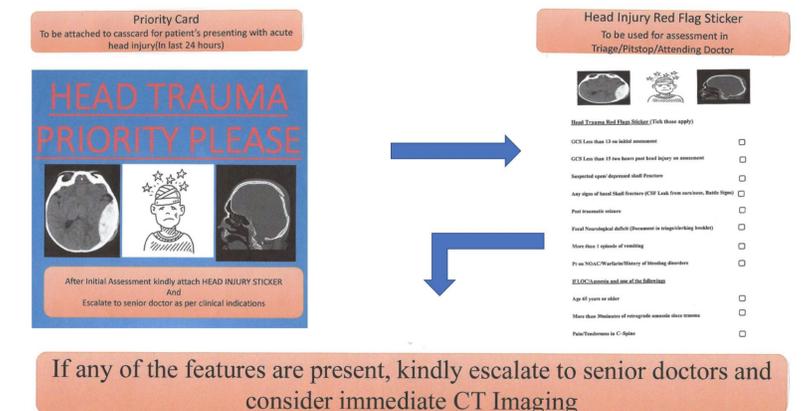
- This retrospective study has shown that doctors are aware of the guidelines with 74% of CT imaging were compliant with the NICE Guidelines. Other main findings:
- 26% of patients had CT scans when it was not warranted.
- Some of the risk factors such as seizures, amnesia, loss of consciousness, episode of vomiting and neurological examinations are not being routinely assessed/documentated in head injury patients. This poses a potential medico-legal issue. (Criteria 1, 3-9)
- 45% of patients presenting were not assessed within the first 15 mins of arrival (Criteria 2).

Implementations

- Findings were presented in both Local Radiology Audit Meeting and Emergency Department Audit Meeting in 2017. Teaching was provided on Head Injury Management - SHO/Registrars teaching, Nurse teaching and Departmental Inductions
- Posters of NICE Head Injury guidelines were placed in the department
- New CT Assessment proforma was introduced for imaging to ensure all criteria are assessed and documented.
- A new pathway for Head Injury management for designed. It has a priority card and a head injury red flag sticker for all head injury patients (see below). Priority card ensures assessment within 15 minutes of arrival.

With these implementations we are looking forward in achieving appropriate CT Imaging which will prevent unnecessary radiations to patients and its complications, while being cost effective for the hospital, while minimising medico-legal issues.

Head Injury Management in the Hillingdon Hospital Emergency Department



References

- National Institute for Health and Care Excellence (2017) Head injury: assessment and early management. NICE guideline (CG176)