Headaches presenting to ED – do we over investigate?

Mark Cross¹, Hannah Kelly², Mairéad Fitzgerald³, Clodagh Loughrey¹, Gareth McKeeman⁵, John Maxwell⁶, Emma Greenwood⁷, Ryan Boyle⁸, Paul Kerr⁹, Eoghan Ferrie¹⁰, Brendan Sinnott¹¹

Clinical Assessment Unit, Royal Victoria Hospital, Belfast

Introduction

Patients presenting to ED with severe, acute headache is a common reason for admission for investigations.

At our institution headache presentations can be seen initially in the Emergency Department (ED) or the Clinical Assessment Unit (CAU).

Materials and Methods

Time period & locations:
- Looked at a typical month, picked at random, more in-depth (Feb 2016)
- Emergency Department
- Clinical Assessment Unit.

Information Systems:
- Symphony (EIMS Health)
- Patient Administration System
- Other time-stamped software systems were used.

CT scanner:
- Phillips Ingenuity 3rd generation
- 2 x 128 slice scanners
- 1 x 64 slice scanner.

Measures

- How many headaches presented to ED/CAU in 1 year?
  - 2467 (total)
  - 789 (CAU)

- In Feb 2016, how many of these had a CT brain?
  - 429 (ED)
  - 39 (CAU)

- How many of these were to exclude a diagnosis of SAH?
  - 22 (ED)
  - 7 (CAU)

- How many were positive for SAH on CT?
  - 5 (ED)
  - 0 (CAU)

- Were these patients transferred to CAU? How many had a lumbar puncture performed? If not why?
  - 12 patients transferred for LP
  - 5 LPs performed. Diagnosis changed.

Results

- CAU requested less CT Heads than ED
- In Feb 2016, of the CT requests from CAU for query SAH, 100% went on to have an LP performed
- Only 65% of ED patients went onto have an LP performed
- Patients sent from ED to CAU (for a lumbar puncture) whose diagnosis was subsequently changed stayed in hospital longer than necessary.

Discussion

CAU carried out less lumbar punctures compared to patients referred from the Emergency Department as query SAH.

This was because:
1. More time for in-depth history-taking
2. Timing of headache identified
3. CT done completed within 6 hours
4. Consultant review and subsequent diagnosis change.

Conclusion

To avoid over-investigation and reduce median length of stay:
1. Headache teaching sessions
2. More in-depth history-taking
3. Triage to CAU at time of presentation
4. Have triage document headache start time
5. Ensure CT done within 6 hours of headache onset
6. Senior review.

Next steps

Aim to reduce unnecessary investigations in headache presentations and therefore reduce length of stay – ongoing QI project to reduce medial length of stay by 10% in 6 months.

Correspondence

1. mark.cross@belfasttrust.hscni.net
2. hkelly07@qub.ac.uk
3. mfitzgerald08@qub.ac.uk
4. clodagh.loughrey@belfasttrust.hscni.net
5. gareth.mckeeman@belfasttrust.hscni.net
6. john.maxwell@belfasttrust.hscni.net
7. emma.greenwood@belfasttrust.hscni.net
8. ryan.boyle@belfasttrust.hscni.net
9. paul.kerr@belfasttrust.hscni.net
10. eoghan.ferrie@belfasttrust.hscni.net
11. brendan.sinnott@belfasttrust.hscni.net