

CLINICAL DECISION RULE TO IDENTIFY PATIENTS WITH SEVERE HEADACHE SUSPICIOUS OF SUBARACHNOID HAEMORRHAGE (SAH)

Ref No: 2523

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Care Group : Unscheduled Care – Emergency
Implemented : November 2017
Last updated : November 2017
Last reviewed : November 2017
Planned review : November 2020
Keywords :
Comments :

BACKGROUND

- 2.5% to 4.5% of Emergency Department (ED) visits are for headache
- 1 in 10 patients who present to ED with a severe headache will have a Subarachnoid Haemorrhage (SAH)
- Mortality of SAH is up to 50%; 15% will die pre-hospital; with 42% of SAH survivors having permanent neurological deficits
- 1 in 20 patients are unfortunately misdiagnosed at time of first ED visit

AETIOLOGY OF SPONTANEOUS SAH

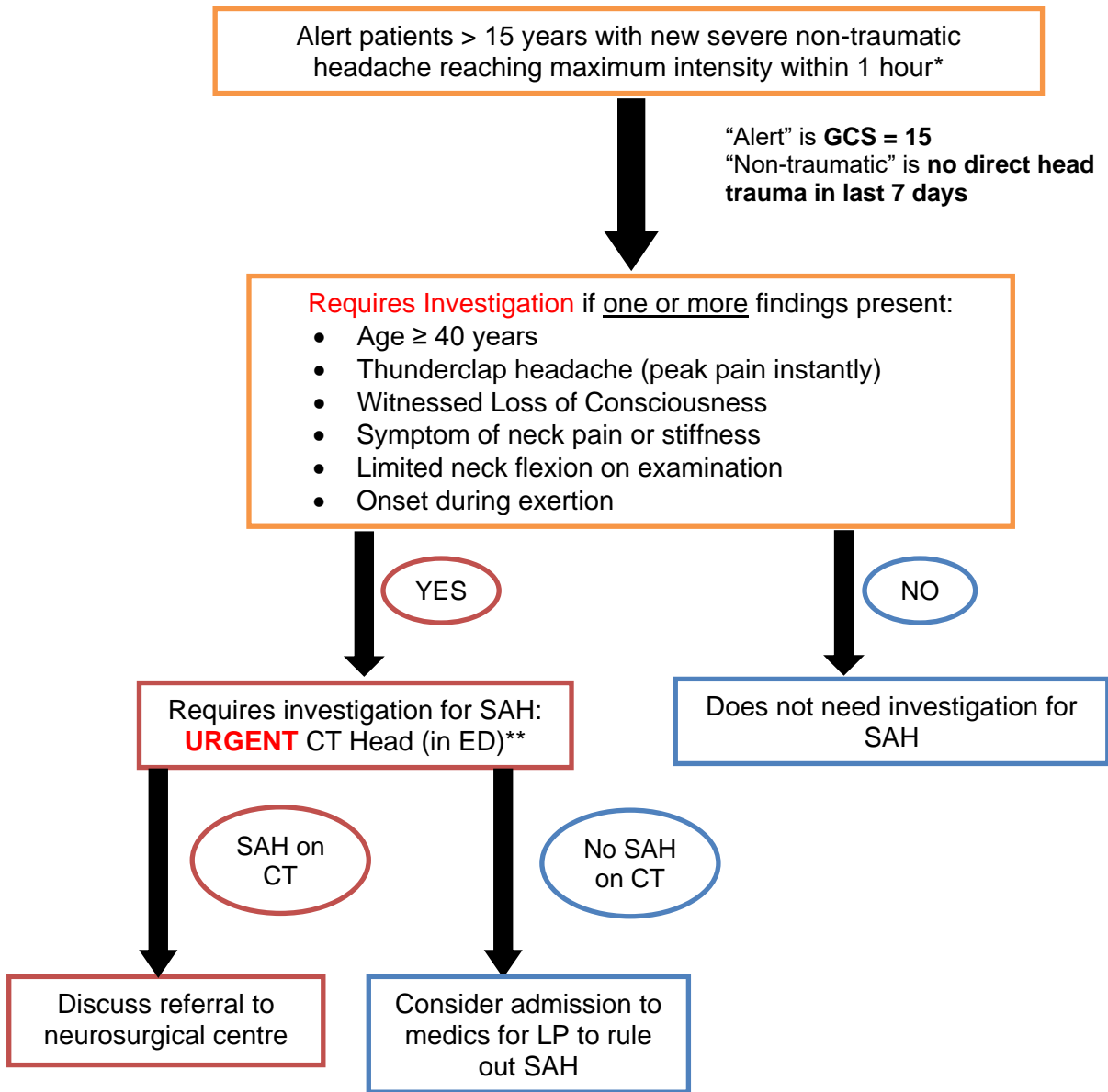
- 85% - ruptured cerebral aneurysms
- 10% - perimesencephalic haemorrhages
- 5% other – AV malformations, inflammatory process, cocaine abuse

OTTAWA CLINICAL DECISION RULE FOR SAH²

Inclusion Criteria: For alert patients > 15 years with new severe non-traumatic headache reaching maximum intensity within 1 hour

Exclusion Criteria: **Not for** patients with new neurological deficits, previous aneurysms, previous SAH, known brain tumours, or history of similar headaches (≥ 3 episodes over ≥ 6 months)

Ottawa SAH Rule has a sensitivity of 100% (95% CI 97.2% - 100%) a specificity between 15.3% (95% CI 13.8 – 16.9%) and 7.6% (95% CI 5.4 - 10.6) ^{2,3}



** Sensitivity of a CT scan for SAH decreases after 6 hours of onset of headache but specificity remains the same¹

Time from headache onset to CT Scan	Sensitivity (95% CI)	Specificity (95% CI)
≤ 6 hours	100 (99.5 – 100)	100 (97 – 100)
> 6 hours	85.7 (78.3 – 90.9)	100 (99.8 – 100)

REFERENCES:

1. Perry JJ et.al. Sensitivity of computed tomography performed within six hours of onset of headache for diagnosis of subarachnoid haemorrhage: prospective cohort study. *BMJ* 2011;343:d4277
2. Perry JJ et.al. Clinical decision rules to rule out subarachnoid haemorrhage for acute headache. *JAMA* 2013 Sep 25;310(12):1248-55
3. Bellolio MF et.al. External validation of the Ottawa subarachnoid haemorrhage clinical decision rule in patients with acute headache. *The American Journal of Emergency Medicine*. 2015 Feb;33(2):244-9.
4. <https://lifeinthefastlane.com/subarachnoid-haemorrhage/>