

# Can the Ottawa Subarachnoid Haemorrhage Rule help reduce neuroimaging rates for suspected subarachnoid haemorrhage? A systematic review.



## BACKGROUND

The Ottawa Subarachnoid Haemorrhage (SAH) Rule is a clinical decision tool to facilitate identification of subarachnoid haemorrhage.

Originally purported that the tool had the potential to reduce neuroimaging rates by approximately 10-20%.

We aimed to systematically review the existing literature to examine the validity and usefulness of the rule.

## WHAT IS THE OTTAWA SAH RULE?

Designed for neurologically intact adults admitted to the Emergency Department (ED) with acute non-traumatic headache.

SAH can be excluded if  $\geq 1$  of the following high risk features are demonstrated:

- Age  $\geq 40$
- Neck pain/stiffness
- Witnessed loss of consciousness
- Onset during exertion
- Thunderclap headache (peaking within 1 second)
- Limited neck flexion on examination

## METHODOLOGY

Medline was searched up to April 2018 using a defined search strategy.

No limits were applied.

Conference abstracts and articles pertaining to the derivation of the rule were excluded.

## RESULTS

66 unique citations were identified, 4 articles included.

Total of 3317 patients enrolled across 4 countries.

### Reliability indicators:

- Sensitivity: 100%
- Specificity: 7.6-13.6%

### Usefulness indicators:

- Actual or potential reduction in investigation rate: 4.7%
- Proportion of ED cohort rule can be applied to: 9%
- Interobserver agreement  $\kappa$  0.82, 95% CI 0.76-0.87

## CONCLUSIONS

Ottawa SAH rule is a reliable clinical decision tool in excluding SAH.

Potential to avoid unnecessary investigations in a small, select proportion of patients.

Limited by a poor specificity - clinical judgement must be applied in patients with  $\geq 1$  high risk features.

## REFERENCES

1. Bellolio MF et al. (2015) External validation of the Ottawa subarachnoid hemorrhage clinical decision rule in patients with acute headache. *Am J Emerg*
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4. Chu et al. (2017) Applying the Ottawa subarachnoid haemorrhage rule on a cohort of emergency department patients with headache. *Eur J Emerg Med*