Ottawa Subarachnoid Hemorrhage Rule

Diagnostic testing was associated with substantially prolonged lengths of stay. CT and LP had low diagnostic yields, which suggests the need for a clinical decision rule to rule out subarachnoid hemorrhage (SAH) in ED patients with acute headache [1].

A study validated clinical practice that a negative CT with a negative lumbar puncture is sufficient to rule out subarachnoid hemorrhage [2].

https://www.mdcalc.com/ottawa-subarachnoid-hemorrhage-sah-rule-headache-evaluation

Only apply in: Alert patients ≥15 years old, new severe atraumatic headache, maximum intensity within 1 hour.

Do not use in: Patients with new neurologic deficits, prior aneurysm, prior SAH, known brain tumors, or chronic recurrent headaches (≥3 headaches of the same character and intensity for >6 months).

More definitive studies are needed to determine an accepted benchmark for the proportion of patients receiving further work-up (computed tomographic brain) after fulfilling the entry criteria for the Ottawa SAH rule [3].

The Ottawa SAH rule demonstrated high sensitivity. Addition of vomiting and SBP >160 mm Hg to the Ottawa SAH rule may increase its sensitivity [4].

Validating the Ottawa SAH Prediction Algorithms will provide a way to accurately identify large SAH cohorts, thereby furthering research and altering care [5].

Ottawa SAH Rule was sensitive for identifying subarachnoid hemorrhage in otherwise alert and neurologically intact patients. Perry et al. believe that the Ottawa SAH Rule can be used to rule out this serious diagnosis, thereby decreasing the number of cases missed while constraining rates of neuroimaging [6].

1)
Perry JJ, Stiell I, Wells G, Spacek A. Diagnostic test utilization in the emergency department for alert headache patients with possible subarachnoid hemorrhage. CJEM. 2002 Sep;4(5):333-7. PubMed PMID: 17608978.
2)
Perry JJ, Spacek A, Forbes M, Wells GA, Mortensen M, Symington C, Fortin N, Stiell IG. Is the combination of negative computed tomography result and negative lumbar puncture result sufficient to rule out subarachnoid hemorrhage? Ann Emerg Med. 2008 Jun;51(6):707-13. doi: 10.1016/j.annemergmed.2007.10.025. Epub 2008 Jan 11. PubMed PMID: 18191293.
3)
Chu KH, Keijzers G, Furyk JS, Eley RM, Kinnear FB, Thom ON, Howell TE, Mahmoud I, Ting JYS, Brown AFT. Applying the Ottawa subarachnoid haemorrhage rule on a cohort of emergency department patients with headache. Eur J Emerg Med. 2018 Dec;25(6):e29-e32. doi: 10.1097/MEJ.0000000000000523. PubMed PMID: 29215380.
4)
Cheung HY, Lui CT, Tsui KL. Validation and modification of the Ottawa subarachnoid haemorrhage rule in risk stratification of Asian Chinese patients with acute headache. Hong Kong Med J. 2018 Nov 9. doi: 10.12809/hkmj187533. [Epub ahead of print] PubMed PMID: 30416104.
5)

English SW, McIntyre L, Saigle V, Chassé M, Fergusson DA, Turgeon AF, Lauzier F, Griesdale D, Garland A, Zarychanski R, Algird A, van Walraven C. The Ottawa SAH search algorithms: protocol for a multi- centre validation study of primary subarachnoid hemorrhage prediction models using health administrative data (the SAHepi prediction study protocol). BMC Med Res Methodol. 2018 Sep 15;18(1):94. doi: 10.1186/s12874-018-0553-3. PubMed PMID: 30219029; PubMed Central PMCID: PMC6139177.

6)

Perry JJ, Sivilotti MLA, Sutherland J, Hohl CM, Émond M, Calder LA, Vaillancourt C, Thirganasambandamoorthy V, Lesiuk H, Wells GA, Stiell IG. Validation of the Ottawa Subarachnoid Hemorrhage Rule in patients with acute headache. CMAJ. 2017 Nov 13;189(45):E1379-E1385. doi: 10.1503/cmaj.170072. Erratum in: CMAJ. 2018 Feb 12;190(6):E173. PubMed PMID: 29133539; PubMed Central PMCID: PMC5687926.