**Introduction:** The Ottawa SAH Rule was developed to identify patients at high-risk for subarachnoid hemorrhage (SAH) who require investigations and the 6-Hour CT Rule found that computed tomography (CT) was 100% sensitive for SAH 6 hours of headache onset. Together, they form the Ottawa SAH Strategy. Our objectives were to assess: 1) Safety of the Ottawa SAH Strategy and its 2) Impact on: a) CTs, b) LPs, c) ED length of stay, and d) CT angiography (CTA).

**Methods:** We conducted a multicentre prospective before/after study at 6 tertiary-care EDs January 2010 to December 2016 (implementation July 2013). Consecutive alert, neurologically intact adults with a headache peaking within one hour were included. SAH was defined by subarachnoid blood on head CT (radiologists final report); xanthochromia in the cerebrospinal fluid (CSF); >1 x 106/L red blood cells in the final tube of CSF with an aneurysm on CTA.

**Results:** We enrolled 3,669 patients, 1,743 before and 1,926 after implementation, including 185 with SAH. The investigation rate before implementation was 38.9% (range 25.9% decreased to 25.9% (p = 0.60), while the proportion who had LP decreased from 38.9% to 25.9% (p < 0.001), and the proportion investigated with CTA increased from 18.8% to 21.6% (p = 0.036). The additional testing rate (i.e. LP or CTA) diminished from 50.1% to 40.8% (p < 0.001). The proportion admitted declined from 9.8% to 7.3% (p = 0.008), while the mean length of ED stay was stable (6.2 +/- 4.0 to 6.4 +/- 4.1 hours; p = 0.45). For the 1,201 patients with CT 6 hours, there was an absolute decrease in additional testing (i.e. LP or CTA) of 15.0% (46.6% versus 31.6%; p < 0.001). The sensitivity of the Ottawa SAH Rule was 100% (95%CI: 98-100%), and the 6-Hour CT Rule was 95.3% (95%CI: 88.9-98.3) for SAH. Five patients with early CT had SAH with CT reported as negative; 2 unruptured aneurysms on CTA and presumed traumatic LP (determined by treating neurosurgeon); 1 missed by the radiologist on the initial interpretation; 1 dural vein fistula (i.e. non-aneurysmal); and 1 profoundly anemic (Hgb 63g/L).

**Conclusion:** The Ottawa SAH Strategy is highly sensitive and can be used routinely when SAH is being considered in alert and neurologically intact headache patients. Its implementation was associated with a decrease in LPs and admissions to hospital.

**Keywords:** subarachnoid hemorrhage

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**PL03**

**Prophylactic administration of diphenhydramine to reduce neuroleptic side-effects in the acute care setting: a systematic review and meta-analysis**

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**Introduction:** Neuroleptics are commonly used drugs to treat different conditions (e.g. psychosis, migraines) in the acute care setting and the emergency department. Their side effects can be disabling or, worse, fatal. The use of diphenhydramine to prevent those side-effects is widespread, but remains controversial. We performed a systematic review to determine if prophylactic administration of diphenhydramine (PAD) reduces the incidence of neuroleptic side-effects.

**Methods:** Data sources: Medline, Embase, Cochrane Library, PsycInfo and Web of Science were searched. References from reviews that were identified in the search and from included studies were also reviewed for inclusion. Study selection: Randomized controlled trials evaluating any neuroleptic with PAD versus the same neuroleptic alone or with any inactive agent. Primary outcome was incidence of any extra-pyramidal side-effect. Secondary outcomes were akathisia, usage of rescue medication, subjective restlessness, neuroleptic malignant syndrome, sedation and sedation intensity. Data extraction: Independent reviewers scanned identified citations, extracted data and assessed for risk of bias. Data analysis: Meta-analysis was performed using random effect models. Heterogeneity and quality of evidence were assessed using, respectively, I² and the GRADE approach.

**Results:** Of 1566 identified citations, nine studies (n = 1436) met all eligibility criteria. Four studies...