Citation

Authors' objectives
The objectives of this evidence based review are:<BR/>To determine the effectiveness of computed tomography (CT) and magnetic resonance imaging (MRI) scans in the evaluation of persons with a chronic headache and a normal neurological examination.<BR/>To determine the comparative effectiveness of CT and MRI scans for detecting significant intracranial abnormalities in persons with chronic headache and a normal neurological exam.<BR/>To determine the budget impact of CT and MRI scans for persons with a chronic headache and a normal neurological exam.

Authors' conclusions
The evidence presented can be summarized as follows:

Pre-test Probability
Based on the results by Sempere et al., there is a low pre-test probability for intracranial abnormalities in persons with chronic headaches and a normal neurological exam (defined as headaches experiences for a minimum of 4 weeks). The Grade quality of evidence supporting this outcome is very low.

Likelihood Ratios
Based on the systematic review by Detsky et al., there is a statistically significant positive and negative likelihood ratio for the following clinical variables: abnormal neurological exam, undefined headache, headache aggravated by exertion or valsalva, headache with vomiting. Grade quality of evidence supporting this outcome is very low.

Based on the systematic review by Detsky et al. there is a statistically significant positive likelihood ratio but non statistically significant negative likelihood ratio for the following clinical variables: cluster headache and headache with aura. The Grade quality of evidence supporting this outcome is very low.

Based on the systematic review by Detsky et al., there is a non significant positive and negative likelihood ratio for the following clinical variables: headache with focal symptoms, new onset headache, quick onset headache, worsening headache, male gender, headache with nausea, increased headache severity, migraine type headache. The Grade quality of evidence supporting this outcome is very low.

Relief from Anxiety
Based on the RCT by Howard et al., it is inconclusive whether neuroimaging scans in persons with a chronic headache are anxiolytic. The Grade quality of evidence supporting this outcome is low.

System Services
Based on the RCT by Howard et al. scanning persons with chronic headache regardless of their anxiety and/or depression level reduces service use. The Grade quality of evidence is low.

System Costs
Based on the RCT by Howard et al., scanning persons with a score greater than 11 on the High Anxiety and Depression Scale reduces system costs. The Grade quality of evidence is moderate.

Comparative Effectiveness of CT and MRI Scans
There is sparse evidence to determine the relative effectiveness of CT compared with MRI scanning for the detection of intracranial abnormalities. The Grade quality of evidence supporting this is very low.

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