

# Utility of Red Flags in the Headache Patient in the ED


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**Utility of Red Flags in the Headache Patient in the ED**

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**Teaching Points to be Addressed**

- What is the usefulness of the clinical warning criteria (red flags) ?
- How do we use the information from the critical warning criteria?
- Is there any special group of patients?

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**Objectives for HA Patients in ED**

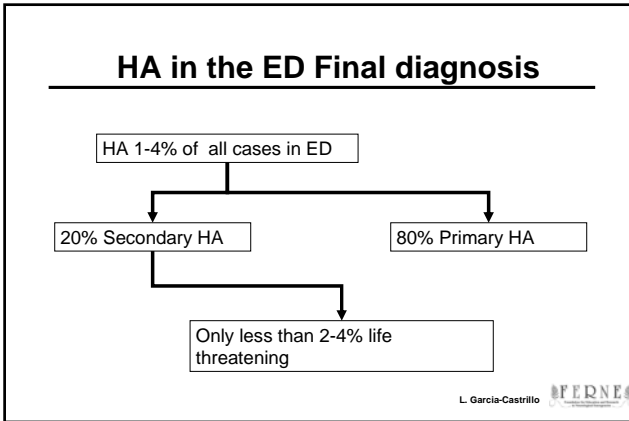
- Identify Secondary HA
  - Rule out life threatening conditions
- Pain control.
- Arrange follow up.

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**Objectives for HA Patients in ED**

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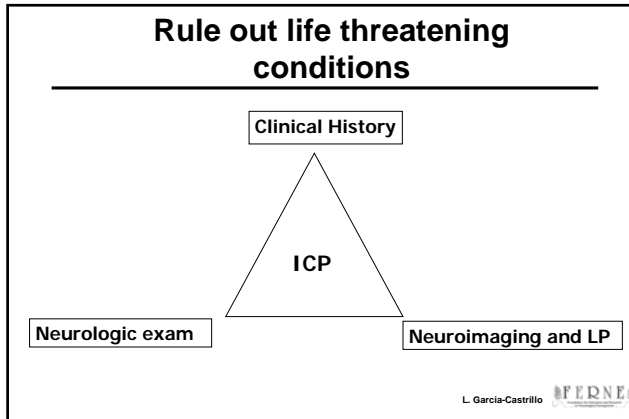
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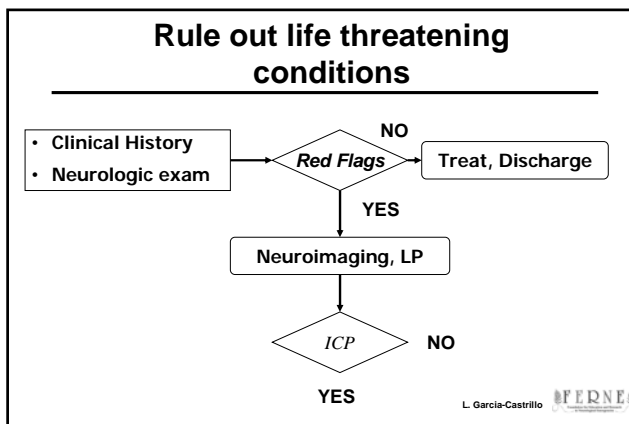
**How do we rule out life threatening conditions ?**

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- ### Red Flags
- **Pain History**
    - First ,Worst headache, Thunderclap
    - Change in presentation, progressive
    - Awakes during sleep.
    - Trigger by exercise , sexual activity, Valsalva.
    - Localization.
  - **Clinical**
    - Nausea, vomiting
    - Fever
  - **Neurology exam**
    - Signs,Symptoms
    - Seizures
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- ### Relevant contributions
- **1994 Frishberg BM.** "The utility of neuroimaging in the evaluation of headache in patients with normal neurologic examinations" *Neurology* 1994;44:1191-97.
  - **1994. AAN** "The utility of Neuroimaging in the Evaluation of patients with normal neurologic examinations"
  - **1996. ACEP** "Clinical Policy for the initial Approach to adolescents and Adults presenting to the Emergency department with Chief Complaint of Headache"
  - **2000. US Headache Consortium** "Evidence based Guidelines in Primary care setting: Neuroimaging in non acute Headache"
  - **2002. ACEP** "Clinical Policy: Critical Issues in the Evaluation and Management of patients Presenting to the Emergency Department with Acute Headache"
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- ### Red Flags rentability, limitations
- **What are the study groups**
    - Similar to ED population?
    - Selection bias
  - **What is the gold Standard**
    - Neuroimaging CT, MRI
    - Including LP
    - Including angiography
    - Including follow up
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### Abnormal Neurologic exam

Authors	LR+	95% CI	LR-	95% CI
USCHC	3.0	2.3-4.0	0.7	0.52-0.93
Ramirez	20	8.9-49.5	0.5	0.37-0.85
Duarte	13.5	3.3-59	0.51	0.37-0.72

Frishberg BM. Evidence based Guidelines in Primary Care Setting: Neuroimaging in Patients with Nonacute headache American Academy of Neurology 2000. <http://www.aan.com>

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## Nausea and Vomiting

Authors	LR+	95% CI	LR-	95% CI
Duarte	1.4	0.69-3.0	0.87	0.51-0.93
Ramirez	1.4	1.18-1.68	0.29	0.08-1.1

Duarte J. Headache of recent onset in adults: a prospective population-based study. *Acta Neurol Scand* 1996;94:67-70

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## Rapidly progressing HA

Authors	LR+	95% CI	LR-	95% CI
Mitchell	12	3.1-48	0.73	0.46-1.2
Ramirez	2.2	1.6-2.9	0.34	0.14-0.81

Ramirez-Lassepas M. Predictors of Intracranial Pathologic Findings in Patients Who Seek Emergency Care Because Headache. *Arch Neuro.* 1997;54:1506-09

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## Awakes from sleep

Authors	LR+	95% CI	LR-	95% CI
Mitchell	98	10-960	0.72	0.45-1.1

Mitchell CS. Computed tomography in the headache patient: is routine evaluation really necessary? *Headache* 1993;33:82-86

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## Worst HA

Authors	LR+	95% CI	LR-	95% CI
Mitchell	1.9	0.3-12	0.93	0.68-1.3

Mitchell CS. Computed tomography in the headache patient: is routine evaluation really necessary? *Headache* 1993;33:82-86

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## Stiff Neck

Authors	LR+	95% CI	LR-	95% CI	
Morgenstern	1.6	0.9-3	0.75	0.49-1.1	SAH
Attia					Men

Attia J. Does this Adult patient have acute Meningitis. *JAMA* 1999;282:175-181.;

Morgenstern LB. Worst Headache and subarachoid Hemorrhage: Prospective, modern Computed Tomography and Spinal Fluid Analysis. 1998;32:297-304

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## HA worsens with Valsalva

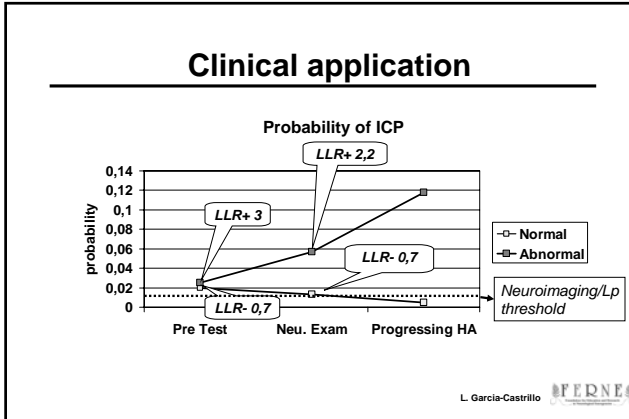
Authors	LR+	95% CI	LR-	95% CI
Duarte	2.3	1.1-4.6	0.67	0.42-1.1

Duarte J. Headache of recent onset in adults: a prospective population-based study. *Acta Neurol Scand* 1996;94:67-70

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- ### Special Groups
- Age >50
  - HIV patients
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### Age over 55

Authors	LR+	95% CI	LR-	95% CI
Ramirez-Lassepas	2.7	1.8-4	0.50	0.28-0.89

Ramirez-Lassepas M. Predictors of Intracranial Pathologic Findings in Patients Who Seek Emergency Care Because Headache. Arch Neuro. 1997;54:1506-09

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### HIV infected Patients

	LR+	Sig.	LR-	Sig.
New HA	1.85	ns	0.78	ns
Different HA	2.26	<0.05	0.66	<0.05

Rothman RE. A decision guideline for Emergency Department Utilization of Noncontrast Head Computed Tomography in HIV-infected Patients. Academic Emergency Medicine 1999;6:1010-19

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- ### Teaching points to be addressed
- What is the usefulness of the clinical warning criteria (red flags) ?
  - Neurologic exam, Rapidly progressing, Awakes from sleep, worsens with Valsalva are the most powerful indicators, while nausea, vomiting, stiffness neck and worse headache are less.
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- ### Teaching points to be addressed
- How do we use the information from the critical warning criteria?
  - The diagnostic characteristics of each test allows a formal analysis for the neuroimaging/LP decision
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# Utility of Red Flags in the Headache Patient in the ED

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## Teaching points to be addressed

- Is there any special group of patients?
- Patients over 50 and IHV have higher prevalence of ICP than the normal population and the diagnostic tests have greater power

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## Summary

- Clinical history and neurologic exam are the cornerstone of the HA management
- More high quality research is need to clarify utility of clinical sings.
- A formal approach helps in the neuroimaging/LP decision

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Questions?