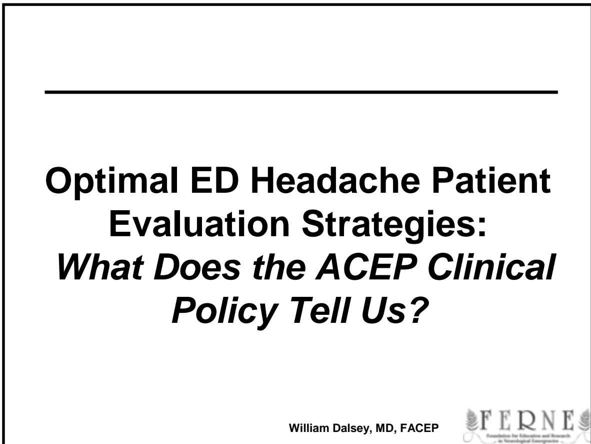
Optimal ED Headache Patient Evaluation Strategies:
What Does the ACEP Clinical Policy Tell Us?
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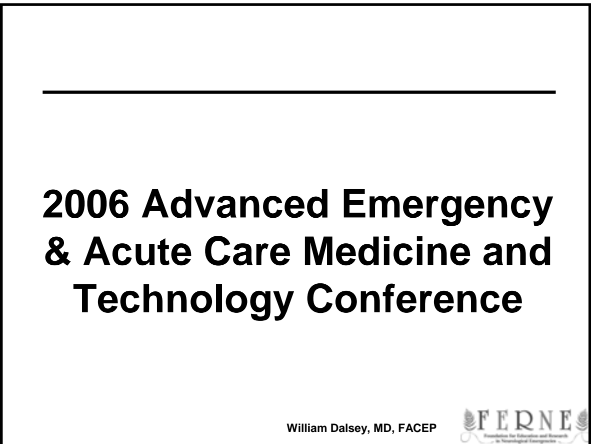
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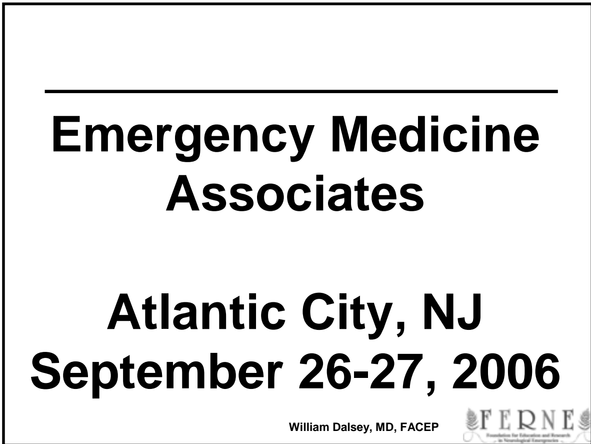
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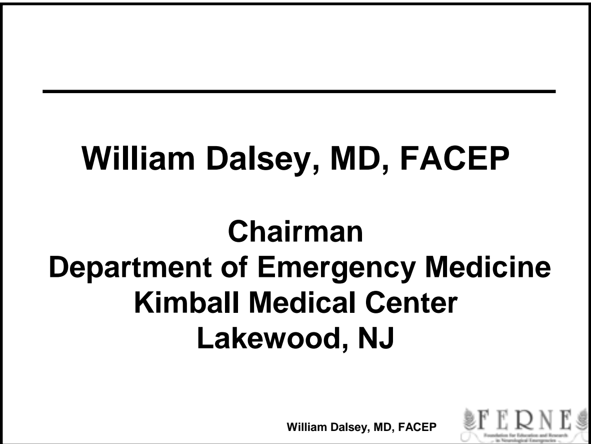
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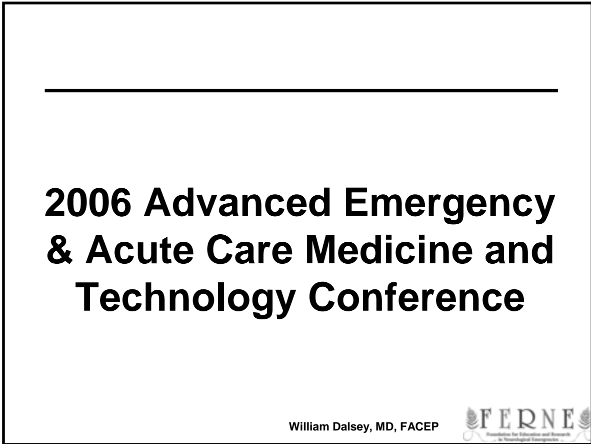
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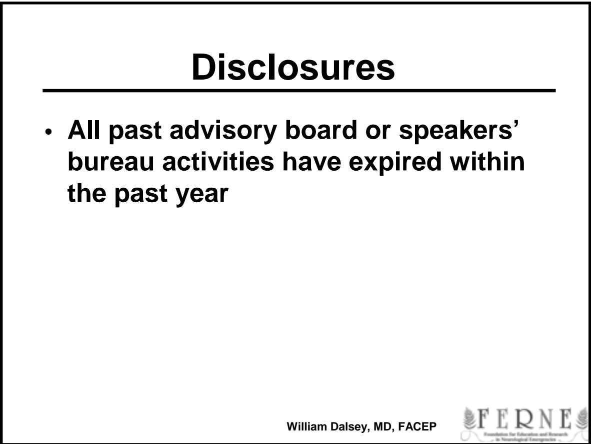
Disclosures
• All past advisory board or speakers' bureau activities have expired within the past year
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ACEP Clinical Policy HA

"Clinical Policy: Critical Issues in the Evaluation and Management of Patients Presenting to the Emergency Department with Acute Headache"

Global Objectives

- Maximize patient outcome
- Utilize health care resources well
- Improve Treatment
- Optimize evidence-based medicine
- Enhance ED practice

Sessions Objectives

- Briefly review the ACEP Clinical Policy process
- Review key concepts of the HA Policy
- Consider critical questions
- Examine recommendations

Case Presentation…

- 38 year old female presents to the Emergency Department with a "bad" headache
- Pain began shortly after a fight with her family
- The onset was sudden and associated with nausea and vomited X 1
- HA is right sided
- She has been drinking ETOH
- She has a history of intermittent headaches without neuroimaging
- She denies trauma or drug use

Case Presentation…

- The patient appears to be in moderately severe pain
- Afebrile VS: BP of 160/100 RR 22 HR 85
- She has a nonfocal neurologic exam
- Symptoms began about 30 minutes ago
- Hx DM, HTN, smoker
- No recent illness
- No meningeal signs

ACEP Clinical Policy HA

- Symptom Based Policy 1999
- Revised Policy 2002

Clinical Questions

- Does the response to therapy predict the etiology of an acute headache?
- When can a lumbar puncture be safely performed without a neuroimaging study?
- Which patients require a neuroimaging study in the ED?
- Is there a need for cerebral angiography in patients with a thunderclap headache and a negative ct and LP?

Response to Treatment

- Pathophysiology of HA pain
- Arteries, veins, nerves, muscles
- Neurogenic inflammation and serotonin 5-HT receptors

Response to Treatment

- Literature: no randomized prospective controlled trials
- Case Reports/Series:

  Seymour: 3 patients 2 ICH, 1 SAH

  Gross: 3 patients bleeding

  Lipton: 1 patient carbon monoxide

Response to Treatment

- Level C Recommendation : pain response to therapy should not be used as the sole diagnostic indicator of the underlying etiology of HA

Can an LP be Performed Without a CT?

- Rationale
- Limitations of CT: CT, reader, time, HBG
- Risk of Herniation

Can an LP be Performed Without a CT?

- Heinrich Quincke 1890
- Furbinger 4 deaths 1896
- Duffy 15/30 patients with ICH
- Duffy 7/44 patient with ICH
- French 1/70 SAH
- Zisfein 1/38 known IC mass effect

- Duke Study 111 pts 17 CNS finding 3/17 contraindications

Can an LP be Performed Without a CT?

- Level C Recommendation: adults patients with signs of increased ICP, papilledema, absent venous pulsations, focal neurologic findings should have neuroimaging before an LP

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Neuroimaging of HA in ED?

- 1% of ED HA patients
- Societal factors
- Outcome measured
- Reassurance

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Neuroimaging of HA in ED?

- AAN Guideline 1994 17 studies

Recommendation 1: not for typical migraine

Recommendation 2: CT for atypical HA, seizures, focal neuro findings

Recommendation 3: not enough evidence for other patients

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Neuroimaging of HA in ED?

- ACEP Headache Policy 1996
- Rules: CT for sudden severe HA, suspected intracranial infecton, and neurologic deficits

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Neuroimaging of HA in ED?

- US Headache Consortium 2000

1. CT if unexplained neurologic abnormality
2. Insufficient evidence to base on symptoms
3. Not warranted in migraine w/o neuro findings
4. Insufficient evidence for tension HA
5. Can't recommended CT vs. MRI

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Neuroimaging of HA in ED?

- Literature conflicting on "worst HA of your life"
- Presence of abnormal neurologic findings increase likelihood positive findings 3 fold and a normal exam reduced the odds positive findings by 30% US HA Consortium
- Ramirez-Lassepas 468 pts abnormal neuro findings had a PPV 39% for CT finding
- Symptoms did not reliably predict positive CTs US HA Consortium

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Neuroimaging of HA in ED?

- Acute sudden-onset Headache vs Worst HA

- Mitchell 1/27 patients with findings
- Ramirez-Lassepas 468 pts no correlation
- Reinus 17 worst HA of life 1/17 positive
- Mills 28% positive

- Harling 35/49 thunderclap HA positive
- Lledo 12/27 9SAH, 1ICH, 2 meningitis

Neuroimaging of HA in ED?

- Patients with HIV Disease

- Lipton 49pts 35% mass lesions
- Rothman 110 pts 24% focal lesions

Neuroimaging of HA in ED?

Level B Recommendations:

1. CT with abnormal neurologic findings
2. Sudden-onset HA
3. HIV patients with new type of HA

Neuroimaging of HA in ED?

Level C Recommendation:

- Consider CT in patients > 50 with new type of HA

Cerebral Angiography?

- Rationale: CT/LP missed SAH

- Day and Rashkin: 1986 case report 42 yo
  Raps: 7 pts with aneurysms of 54
  Hughes: 2 pts SAH and vasospasm

Cerebral Angiography?

- Wijdicks: 71 pts 6 angio no findings
- Slivka and Philbrook: 6 pts vasospasm
- Harling 49 pts no findings

- Other CNS causes case reports: cerebral venous thrombosis, carotid or vertebral artery dissection

Cerebral Angiography?

- Level C Recommendation:

Patients with a normal CT and LP don't need emergent cerebral angiography

Case Presentation

- So what Happened?

Questions?

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