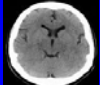


Critical Issues in the Evaluation and Management of Adult Patients Presenting to the ED with Seizures:


The 2004 ACEP Clinical Policy

J. Stephen Huff, MD, FACEP

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Disclosures

ACEP Clinical Policies Committee

Executive Board, Foundation for Education and Research in Neurologic Emergencies

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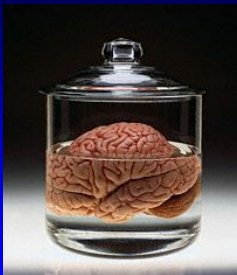


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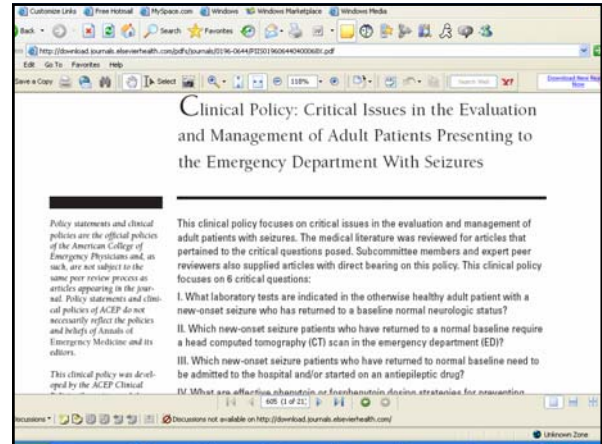



Clinical Policy: Critical Issues in the Evaluation and Management of Adult Patients Presenting to the Emergency Department With Seizures

Annals of Emergency Medicine May, 2004
Clinical Policy Subcommittee on Seizures

Andy Jagoda, Ed Kuffner, J. Stephen Huff,
Edward Sloan, William Dalsey

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Clinical Policy: Critical Issues in the Evaluation and Management of Adult Patients Presenting to the Emergency Department With Seizures

This clinical policy focuses on critical issues in the evaluation and management of adult patients with seizures. The medical literature was reviewed for articles that pertained to the critical questions posed. Subcommittee members and expert peer reviewers also supplied articles with direct bearing on this policy. This clinical policy focuses on 6 critical questions:


- I. What laboratory tests are indicated in the otherwise healthy adult patient with a new-onset seizure who has returned to a baseline normal neurologic status?
- II. Which new-onset seizure patients who have returned to a normal baseline require a head computed tomography (CT) scan in the emergency department (ED)?
- III. Which new-onset seizure patients who have returned to normal baseline need to be admitted to the hospital and/or started on an antiepileptic drug?
- IV. What are efficacious, safe, and/or feasible admission strategies for nonseizure patients?

This clinical policy was developed by the ACEP Clinical Policy Subcommittee on Seizures.

ACEP Seizure Clinical Policy

Scheduled revision of clinical policy
Transition to new format - Q/A
Evidence-based
Inclusions / exclusions - adult patients


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Question 1. What laboratory tests are indicated in the otherwise healthy adult patient with a new-onset seizure who has returned to a baseline normal neurologic status?

Literature suggests lab testing low yield
glucose
sodium
Identification of pregnancy important
Drug screen? - no prospective studies
Lumbar puncture? - if immunosuppressed

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What Lab Testing?

Level A recommendations. None specified
Level B recommendations.

1. Determine a serum glucose and sodium level....
2. Obtain a pregnancy test if a woman is of childbearing age
3. Perform a LP, after a CT, either in the ED or after admission, on immunocompromised pts

Level C recommendations. None specified


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Question 2. Which new-onset seizure patients who have returned to baseline require a head CT in the ED?

Literature shows little evidence for non-directed testing
History, physical most important in determining testing

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CT Neuroimaging?

Level A recommendations. None specified
Level B recommendations

1. When feasible, perform neuroimaging of the brain in the ED on pts with a first-time seizure
2. Deferred neuroimaging may be used when reliable followup is available.

Level C recommendations. None specified


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Question 3. Which new-onset seizure patients who have returned to normal baseline need to be admitted to the hospital and/or started on an antiepileptic drug?

What outcome measure? What time frame?
Little info on risk of early seizure recurrence
Rate 14% at one year for unprovoked seizure
AED decision based on labs, imaging, EEG
Rarely is all info available in the ED

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Admission, AED Initiation?

Level A recommendations. None specified.
Level B recommendations. None specified.
Level C recommendations.

1. Patients with a normal neurologic examination can be discharged from the ED with outpatient followup.
2. Patients with a normal neurologic examination, no comorbidities, and no known structural brain disease do not need to be started on an AED in the ED.



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Question 4. What are effective phenytoin or fosphenytoin dosing strategies for preventing seizure recurrence in patients who present to the EDwith subtherapeutic level?

No studies designed to compare seizure recurrence rates
Achievement of therapeutic level used as an outcome measure
Adverse events important...
Studies mix seizures of different causes, alcohol-related seizures

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Phenytoin Loading?

Level A recommendations. None specified
Level B recommendations. None specified
Level C recommendations.

Administer an intravenous or oral loading dose of phenytoin or intravenous or intramuscular fosphenytoin, and restart daily oral maintenance dosing.

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Question 5. What agent(s) should be administered to a patient in status epilepticus who continues to seize after having received benzodiazepine and phenytoin?

Limited prospective trials - small series
Epilepsy Foundation of America –
high dose phenytoin
Intravenous valproate, levetiracetam
Infusion of benzodiazepines
Infusion of propofol

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Status Epilepticus Rx?

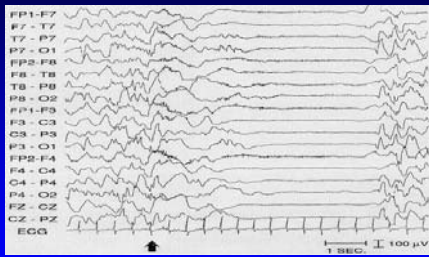
Level A recommendations. None specified.

Level B recommendations. None specified.

Level C recommendations.

Administer one of the following agents intravenously: “high-dose” phenytoin, phenobarbital, valproic acid, midazolam infusion, pentobarbital infusion, or propofol infusion.

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Question 6. When should an EEG be performed in the ED?

Many recommendations, little data
Survey of EEG labs- little agreement
persistent altered consciousness / coma
refractory generalized convulsive SE
pharmacologically induced coma
encephalitis

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ED EEG Testing?

Most compelling argument-
detection of subtle status epilepticus (transformed SE, ‘nonconvulsive’ SE) diagnosis
to alter therapy
Up to 25% of patients with EEG seizures

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ED EEG Testing?

Level A recommendations. None specified.

Level B recommendations. None specified.

Level C recommendations.

Consider an emergent EEG in patients suspected of being in nonconvulsive SE or in subtle convulsive SE, patients who have received long-acting paralytic, or patients who are in drug-induced coma.

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Conclusions

ACEP practice parameter defines role and timing of emergency management of seizures

Largely based upon Class II and III evidence

Many simple questions without answers

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Recommendations

Keep listening....

Standards are few....

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Commentary

What does the clinical guideline really tell us?

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Commentary

Is the guideline clinically relevant?

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Commentary

How could the guideline be enhanced?

Is there literature out there that could really answer the questions in a clinically useful manner?

If there isn't how can they be answered?

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Questions?

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