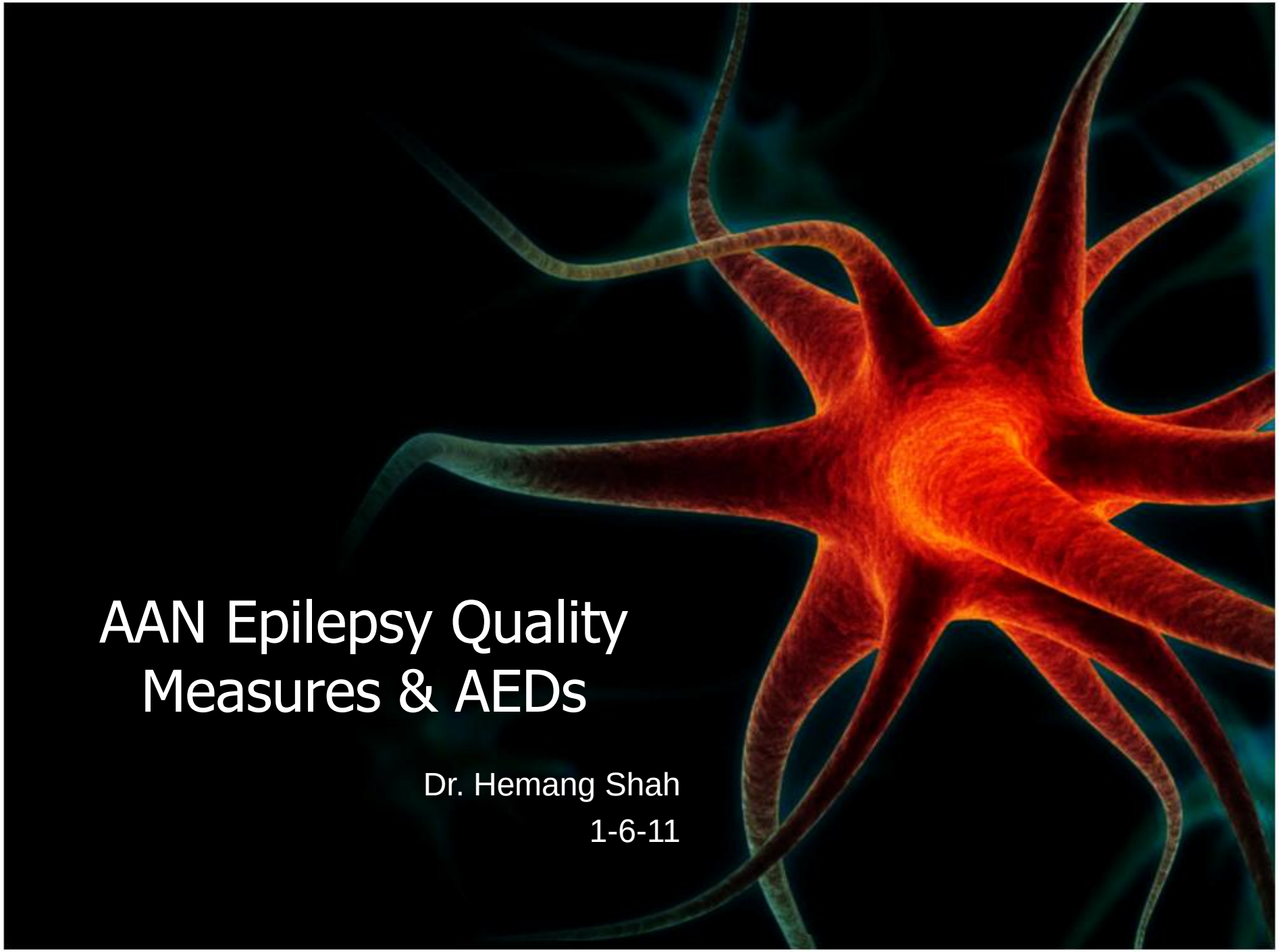

AAN Epilepsy Quality Measures & AEDs

Dr. Hemang Shah

1-6-11

SPECIAL ARTICLE

Quality improvement in neurology: AAN epilepsy quality measures

Report of the Quality Measurement and Reporting Subcommittee of the American Academy of Neurology

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ABSTRACT

Objective: Epilepsy is a common neurologic condition with significant personal, societal, medical, and economic burdens. There are considerable gaps in the quality of care delivered. Measuring the quality of care delivered is the first step to its improvement. Performance measures are easily identified and quantitated ways to assess whether specific activities were carried out during a patient encounter. Therefore, epilepsy performance measures were derived through a standardized systematic process and may be the basis for pay-for-performance initiatives and maintenance of certification requirements.

Methods: Epilepsy measures were developed through the American Medical Association–convened Physician Consortium for Performance Improvement (PCPI) independent measure development process, which marked the first time a medical specialty society followed this process. Guidelines, measures, and consensus papers reviewed for the period 1998 to 2008 using the National Guidelines Clearinghouse, the National Quality Measures Clearinghouse, PubMed, MEDLINE, and the Cochrane Library were evaluated using a framework to determine the acceptability of each guideline or other evidence review document for measures development. Recommendation statements based on level of evidence, importance, validity, and gap in care were developed into candidate measures. A panel of experts from representative organizations vetted the measures. A period of public comment was followed by approval from the American Academy of Neurology and the PCPI.

Results: Literature search identified 160 relevant recommendation statements from 19 guidelines and 2 consensus papers. Systematic assessment resulted in 20 recommendation statements that were refined to 8 candidate measures by the expert panel. The measures are relevant to seizure type and frequency, etiology or epilepsy syndrome, EEG, neuroimaging, antiepileptic drug side effects, safety issues, referral for refractory epilepsy, and issues for women of childbearing potential.

Why do we need quality measures?

- Epilepsy treatment gap
- Racial, ethnic, and socioeconomic disparities in access to treatment, especially surgery.*
- Performance measure might improve quality of care.
- PIP (Performance In Practice – part of MOC), P4P (PQRI), CPT 2

Mclelland S 3rd, Guo H, Okuyemi KS. Racial disparities in the surgical management of intractable temporal lobe epilepsy: a population-based analysis. Arch Neurol 2010; 67:577–583.

Methods

- Find experts
- Topic selection
- Review available literature
- AMA input
- Public input
- Coders/insurance company/ACOs input
- NOTE THIS MEASURES ARE WRITTEN FOR PRIMARY CARE PHYSICIANS IN MIND.

Measure 1

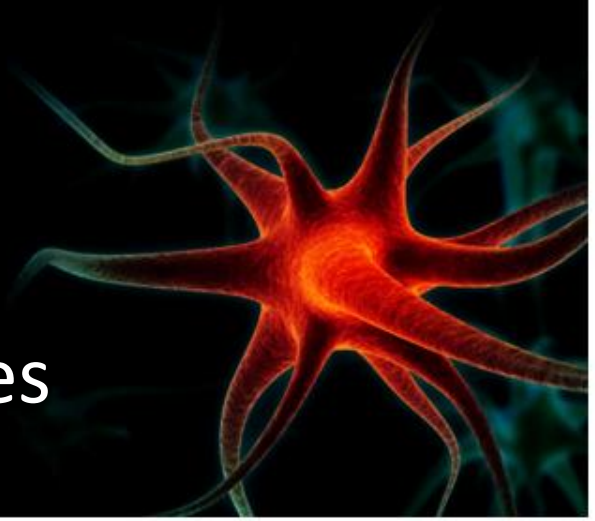
- Seizure type and current seizure frequency
- All visits with the type(s) of seizure(s) and current seizure frequency for each seizure type documented in the medical record.
- CPT II code 1200F
- Exclusion: medical, patient
- 1200F-1P and 1200F-2P

Why this measure

- Patient: “I am doing well”
- Some seizure types are more disabling than others

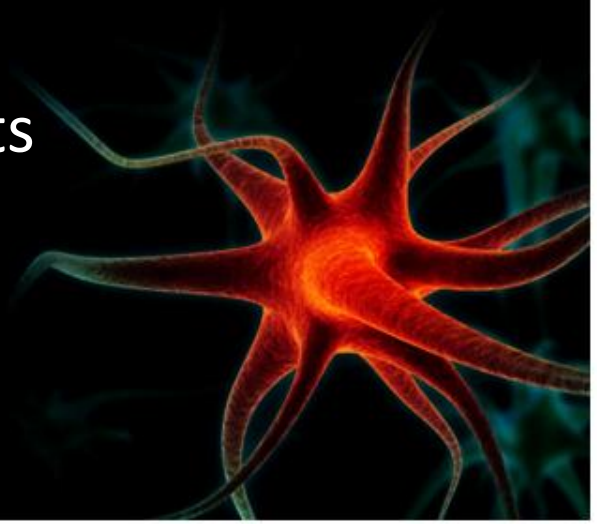
Measure 2

- Documentation of etiology of epilepsy or epilepsy syndrome
- All visits with the etiology of epilepsy or epilepsy syndrome reviewed and documented if known, or documented as unknown or cryptogenic.
- High-quality medical care
- Change in management strategies



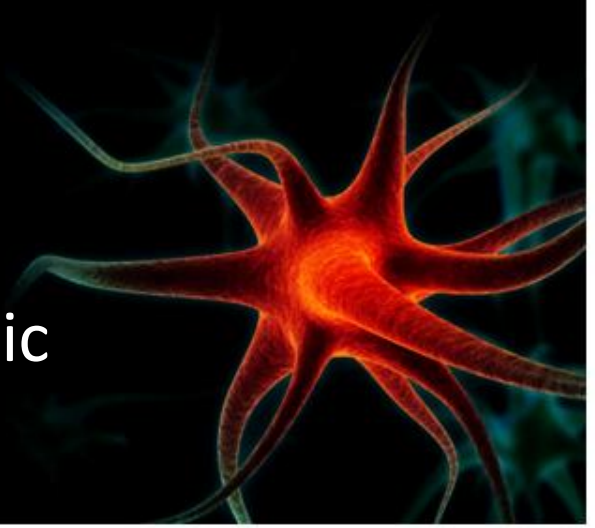
Measure 3

- EEG results reviewed, requested, or test ordered.
- All initial evaluations with the results of at least one EEG reviewed or requested, or if EEG was not performed previously, then an EEG ordered.
- EEG is necessary to characterize the epilepsy syndrome which often predicts the natural history, treatment, and response.
- Doesn’t mean do it every time.



Measure 4

- MRI/CT scan reviewed, requested, or scan ordered.
- All initial evaluations with the results of at least one MRI or CT scan reviewed or requested or, if a MRI or CT scan was not obtained previously, then a MRI or CT scan ordered (MRI preferred).
- Exclusions when neuroimaging is not indicated, such as for known idiopathic generalized epilepsy syndromes.

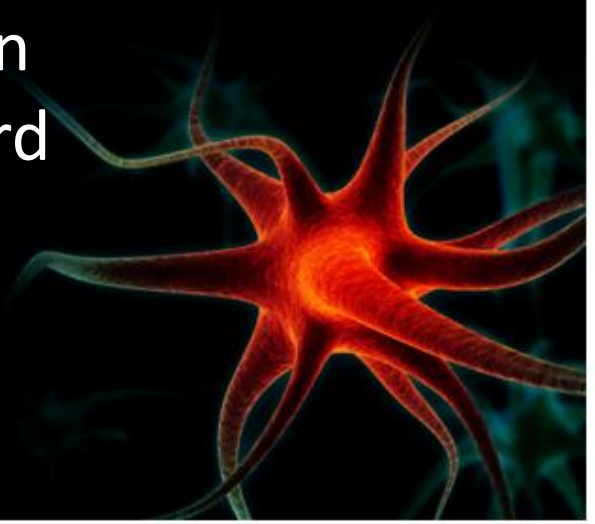


Measure 5

- Querying and counseling about antiepileptic drug side effects
- All visits where patients were queried and counseled about antiepileptic drug side effects and the *querying and counseling was documented in the medical record.*
- Increase the burden of documentation

Measure 6

- Surgical therapy referral consideration for intractable epilepsy
- All patients with a diagnosis of intractable epilepsy who were considered for referral for a neurologic evaluation of appropriateness for surgical therapy and the consideration was documented in the medical record within the past 3 years.
- Patients who are not candidates for surgery now may be in a few years

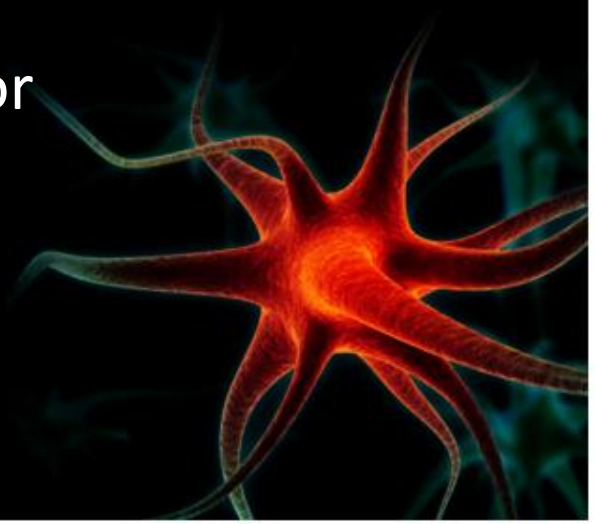


Measure 6

- For Tertiary care center: if not getting surgical evaluation need to document, the reasons why the patient is not a surgical candidate.

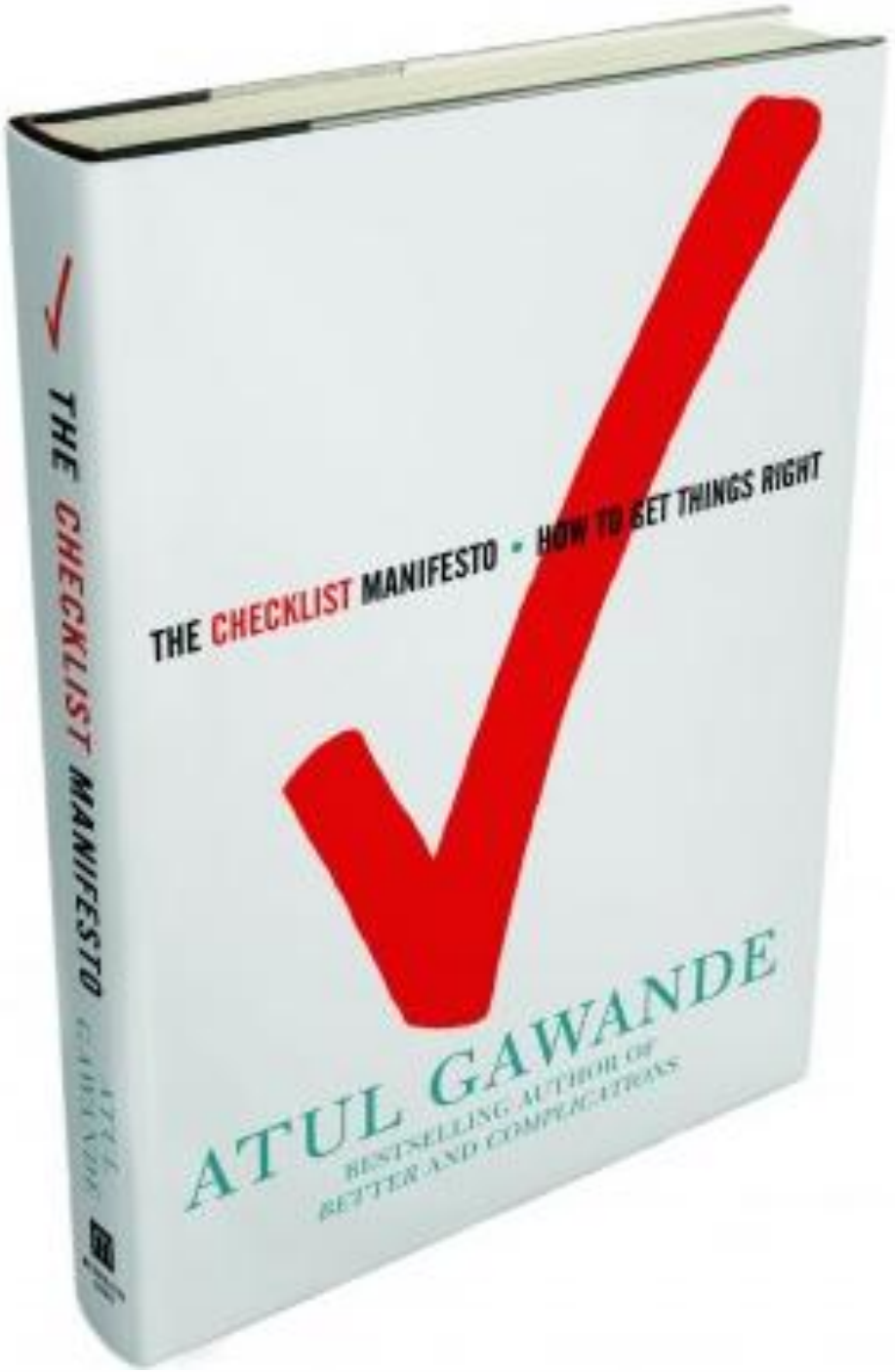
Measure 7

- Counseling about epilepsy specific safety issues
- All patients who were counseled about context-specific safety issues, appropriate to the patient's age, seizure type(s) and frequency(ies), occupation and leisure activities, etc. (e.g., injury prevention, burns, appropriate driving restrictions, or bathing) at least once per year.
- Lack of high-level recommendation statements



Measure 8

- Counseling for women of childbearing potential with epilepsy
- All female patients of childbearing potential (12–44 years old) diagnosed with epilepsy who were counseled about epilepsy and how its treatment may affect contraception and pregnancy at least once per year.


THE CHECKLIST MANIFESTO
HOW TO GET THINGS RIGHT
ATUL GAWANDE
BESTSELLING AUTHOR OF
BETTER AND COMPLICATIONS
THE CHECKLIST MANIFESTO
ATUL GAWANDE

It is very easy to be excellent once but very difficult to be good all the time.

Discussion

- Should be part of daily practice
- AAN is the first medical society to come up with quality measures through PCPI.
- Measures are actionable
- Majority of epilepsy care is done by primary care.
- Dr. Park will show us – how we have implemented quality measures (long before they were published)

AEDs: When to start, when to stop

- Lets talk about what is important for a resident/student to know.
- We are fortunate to have this many options.
- Swift: when you have many options to treat something -

ANTIEPILEPTIC DRUG THERAPY: WHEN TO START, WHEN TO STOP

Jeffrey W. Britton

ABSTRACT

We are fortunate to practice in an era in which multiple antiepileptic drug (AED) options are available for use in the treatment of epilepsy and seizures. However, clinical decisions regarding when AED therapy should be initiated and when discontinuation can be considered remain complex. It is known that not every patient presenting with a seizure will suffer a recurrence, and some will do well without treatment. It is also known that a certain proportion of patients with a past history of seizures will enter remission, in which case AEDs can be discontinued. In this chapter, the subjects of AED initiation and discontinuation will be reviewed.

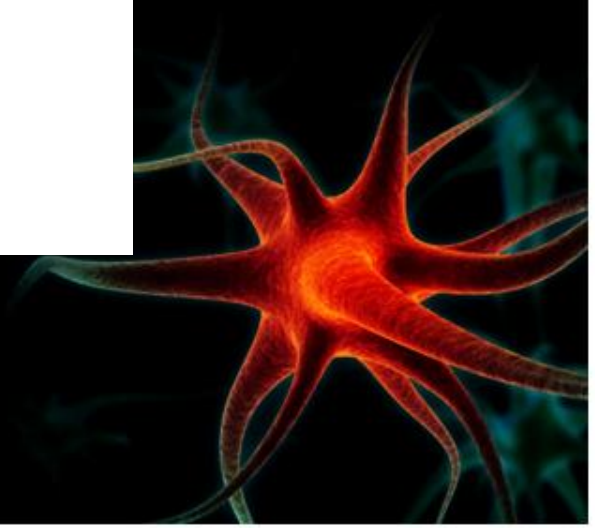
Continuum Lifelong Learning Neurol 2010;16(3):105–120.

KEY POINT

- Not all patients who present with a first seizure will experience another.

INTRODUCTION

Health care providers treating epilepsy today have more antiepileptic drug (AED) options at their disposal than at any time in history. Despite these advances, the potential for benefit from the treatment exceeds the potential for harm. In the treatment of epilepsy, this is important to bear in mind because AED treatments all offer obvious potential benefits but



Basic principals

- AEDs come with risks and may affect quality of life negatively.
- Not all patients who present with a first seizure will experience another – so delay AED if appropriate.
- Discontinue AED if no need anymore.

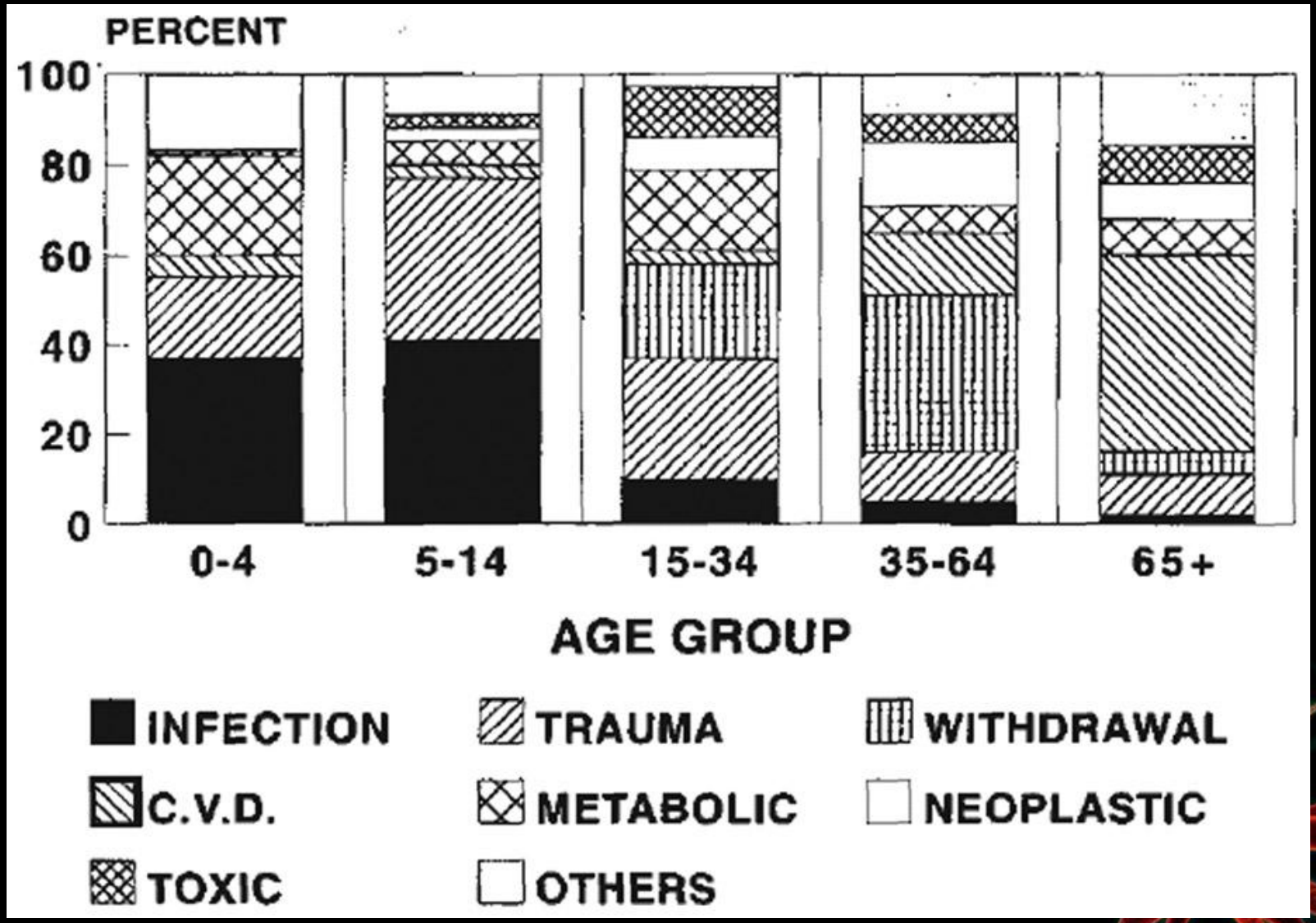
When to not to start?

- Benefit > Risk
- Acute symptomatic seizure: Seizure due to reversible and temporary precipitating factor.
- Treat the cause first.
- Meds: opiate and some nonopiate analgesics, quinolone and high doses of β-lactam antibiotics, antidepressants (wellbutrin)

Causes of symptomatic seizure

- Transient metabolic disturbaces – hyponatremia, hypomagnesemia, hypoglycemia etc.
- Traumatic Brain Injury (Acute Vs Chronic, Mild – 1.5 over Severe 17.5)
- Vascular, neoplastic, infectious

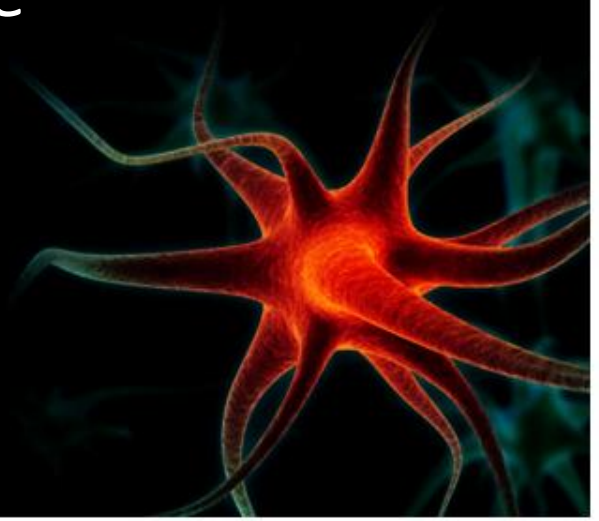
Acute symptomatic seizures: etiology by age.



Annegers JF, Hauser WA, Lee JR, Rocca WA. Incidence of acute symptomatic seizures in Rochester, Minnesota, 1935–1984. Epilepsia 1995;36(4):331.

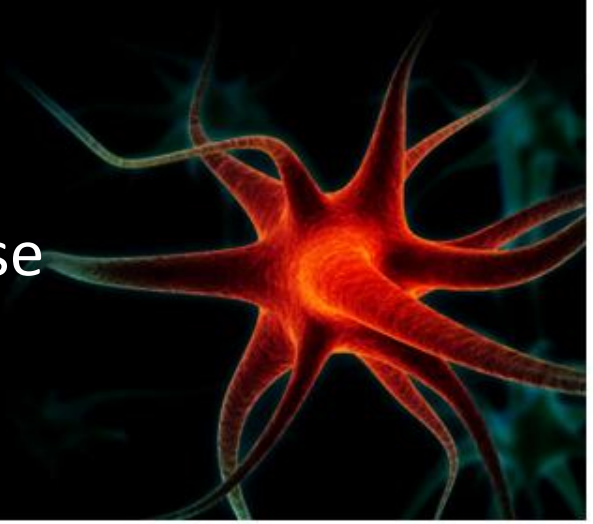
What Tests Should I Order for the First-Seizure Patient?

- CT or MRI of the Brain: Consider contrast if tumor or abscess suspected
- EEG: Preferably including a sleep recording. Preferably performed within 24 to 48 hours of the seizure
- Urine toxicology screen for illicit drugs
- EKG: Screen for QT prolongation



What Tests Should I Order for the First-Seizure Patient?

- Routine Blood Laboratory Tests: Sodium, potassium, magnesium, ionized calcium, creatinine, liver enzymes, complete blood cell count with differential
- Consider CSF Examination: Glucose (with serum glucose), protein, white blood cell count, red blood cell count, cytologic examination, bacterial/fungal/mycobacterial cultures, consider herpes simplex virus polymerase chain reaction, other serologic tests as clinically indicated



Clinical Factors Associated With Recurrence Risk After a First Seizure

- Remote symptomatic etiology
- Neurologic examination abnormalities
- First seizure occurred out of sleep
- Epileptiform abnormalities associated with two fold risk of recurrence
- Sleep increases EEG sensitivity by ~25%
- Performing EEG within 24 hours increases sensitivity by 15%
- The recurrence rate after a first unprovoked seizure in adult and pediatric studies ranges from 31% to 56% over 2 to 5 years of follow-up.

What Is the Role of EEG in Assessing Recurrence Risk?

- EEG sensitivity in predicting recurrence = 48% to 61%, specificity = 71% to 91%
- A meta-analysis of 16 studies, showed epileptiform abnormalities to be associated with a recurrence risk ratio of 2.0 (1.6 to 2.6)*
- Concurrent scalp and intracranial recordings show that the scalp EEG detects only 10% to 15% of spikes seen on the cortical surface. **

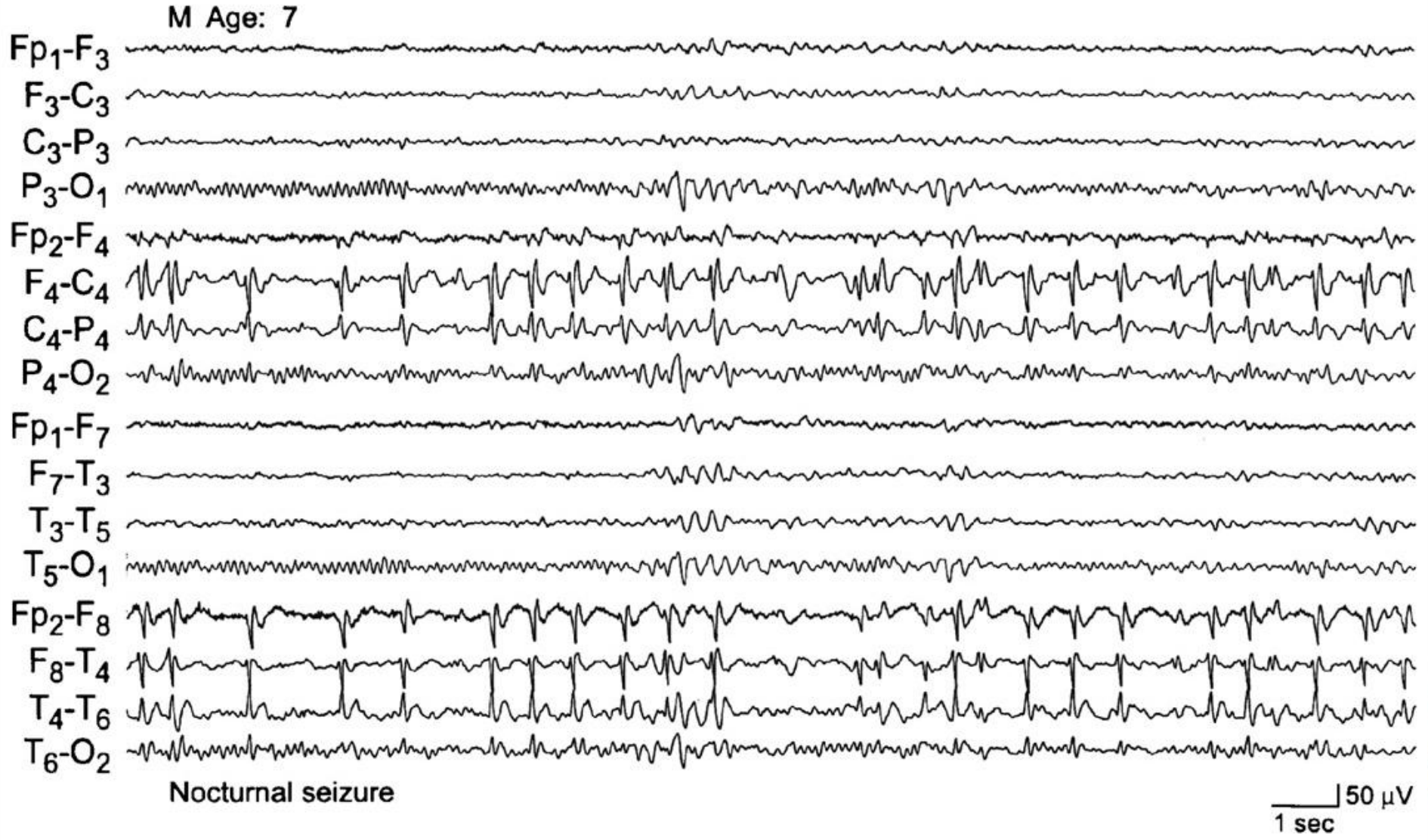
* Berg AT, Shinnar S. The risk of seizure recurrence following a first unprovoked seizure: a quantitative review. Neurology 1991;41(7):965–972.

** Tao JX, Baldwin M, Hawes-Ebersole S, Ebersole JS. Cortical substrates of scalp EEG epileptiform discharges. J Clin Neurophysiol 2007;24(2):96–100.

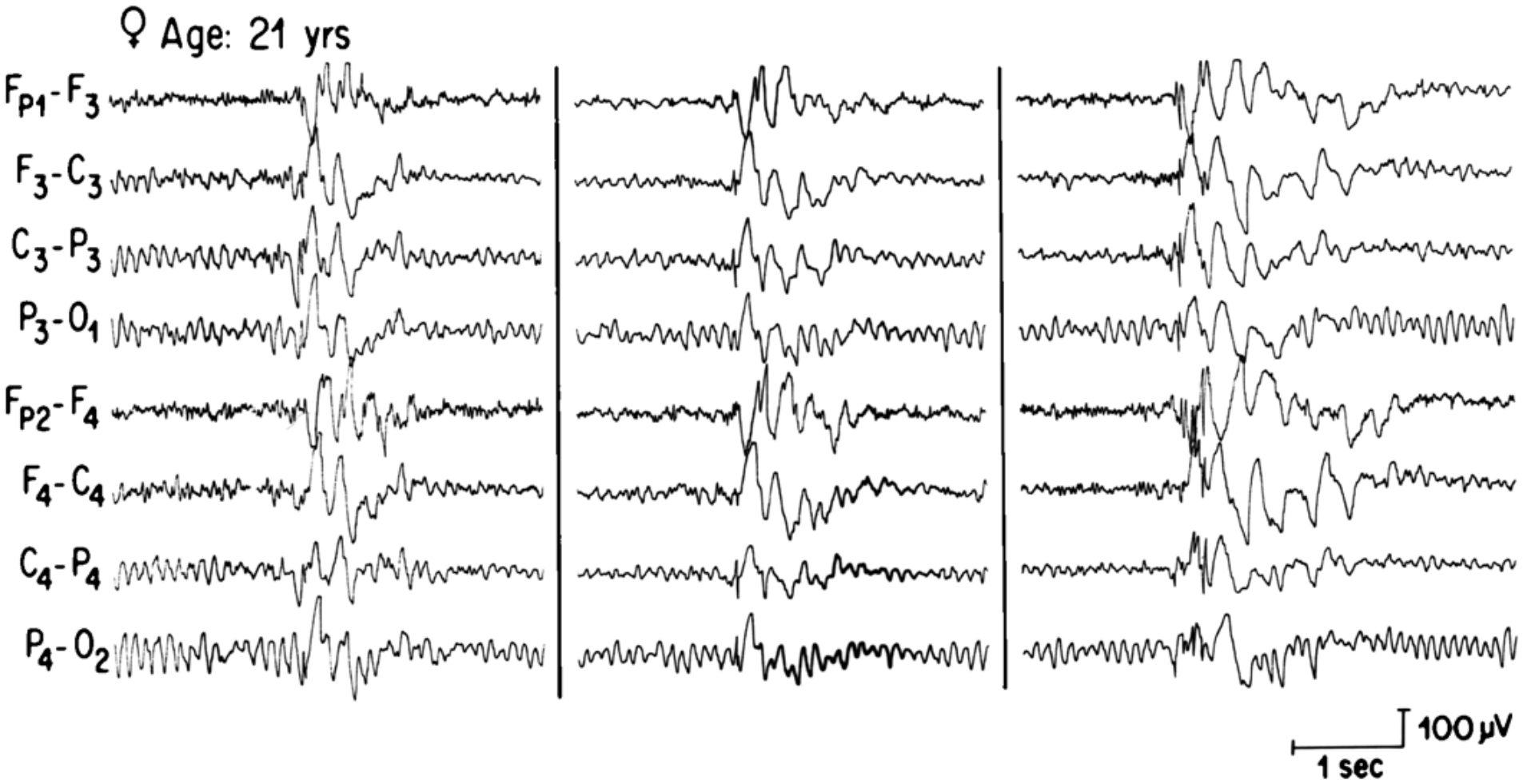
EEG

- The proportion of EEGs performed within 24 hours showed epileptiform abnormalities in 51% compared with 34% in EEGs performed more than 24 hours after the index seizure.*
- A sleep-deprived EEG has been shown to increase the proportion of EEGs showing epileptiform abnormalities by 13% to 35% *
- EEG diagnostic of some epilepsy syndromes. E.g…

* King MA, Newton MR, Jackson GD, et al. Epileptology of the first-seizure presentation: a clinical, electroencephalographic, and magnetic resonance imaging study of 300 consecutive patients. Lancet 1998;352(9133):1007–1011.



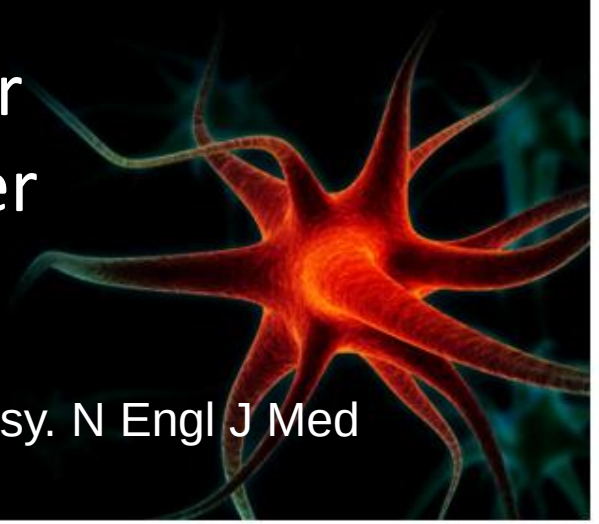
Right Centrotemporal spikes in a 7-year-old boy with Benign Rolandic Epilepsy of childhood.



Generalized polyspike and atypical spike-and-wave abnormalities in a patient with Juvenile Myoclonic Epilepsy.

ANTIEPILEPTIC DRUG THERAPY: WHEN TO STOP

- Seizure control is achievable for most patients presenting with epilepsy and prolonged remissions are common.
- UK National General Practice Study of Epilepsy, 86% of patients achieved a 3-year and 68% a 5-year remission over a 9-year period after initiation of therapy.



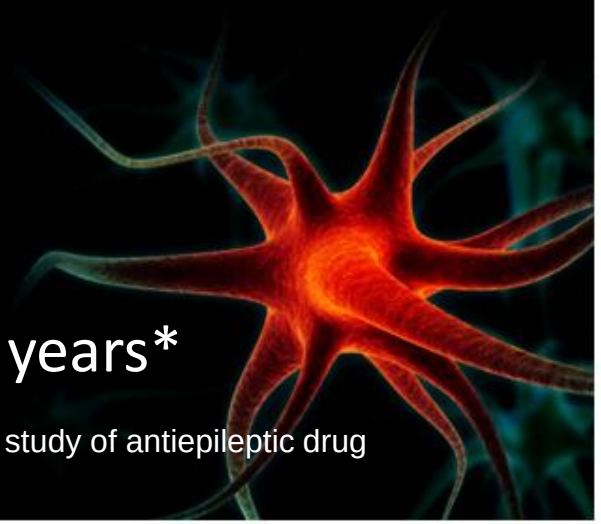
Kwan P, Brodie MJ. Early identification of refractory epilepsy. N Engl J Med 2000;342(5):314–319.

STOP AED ?

- Physicians are often more hesitant than the patient to consider AED discontinuance. (we know potential risks – health, socioeconomical, medicolegal)
- Benefits of discontinuation: side-effects, teratogenic risk, cost, fear of potential SE.
- The reported relapse rates in published AED discontinuance series range from 12% to 63% at 2- to 5-year follow-up, with most showing a relapse rate of 41% or less.

Favorable risk factors for successful AED discontinuation

- Age of onset greater than 2 years and less than 11 or 12 years
- Idiopathic etiology
- Normal mentation
- Normal neurologic examination
- Childhood absence epilepsy
- Benign rolandic epilepsy
- Prompt initial AED response
- Infrequent seizures
- Low drug levels at time of decision
- Seizure-free interval much greater than 2 years*



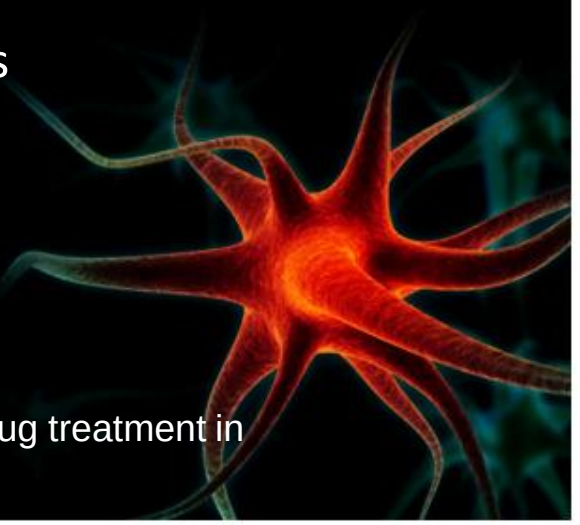
* Medical Research Council Antiepileptic Drug Withdrawal Study Group. Randomised study of antiepileptic drug withdrawal in patients in remission. Lancet 1991;337(8751):1175–1180.

Unfavorable risk factors for successful AED discontinuation

- Age of onset greater than age 10 to 12 years
- Symptomatic etiology
- Mental retardation
- Abnormal neurologic examination
- Juvenile myoclonic epilepsy
- Symptomatic partial epilepsy
- Poor initial AED response
- More than one AED at time of discontinuance
- EEG abnormalities
- Family history of epilepsy

EEG in Determining the AED Discontinuance Relapse Risk?

- Should not be relied on in isolation.
- In a meta-analysis the relapse risk associated with an abnormal EEG showed a statistically significant risk ratio of 1.45 (95% CI, 1.18-1.79).
- Prediscontinuation EEG Abnormalities: Associated with poor prognosis any EEG abnormality (Epileptiform abnormalities, generalized spike and wave)
- Trend of EEG Abnormalities: During and after AED discontinuance Increasing epileptiform abnormalities
- Unfavorable stopping taper when in face of EEG deterioration—decreased relapse rate*
- EEG helpful in establishing epilepsy syndrome – help prognosis.



* Uesugi H, Kojima T, Miyasaka M, et al. Discontinuation of antiepileptic drug treatment in controlled seizure patients. Jpn J Psychiatry Neurol 1994;7(3): 178–188.

Basic EEG limitations

- Scalp recording – skull
- Brain convoluted – sulci,
- Inaccessible surfaces: inferior temporal, inferior frontal, midline
- Sleep recording
- Limited electrode placement
- AED suppress interictal activity

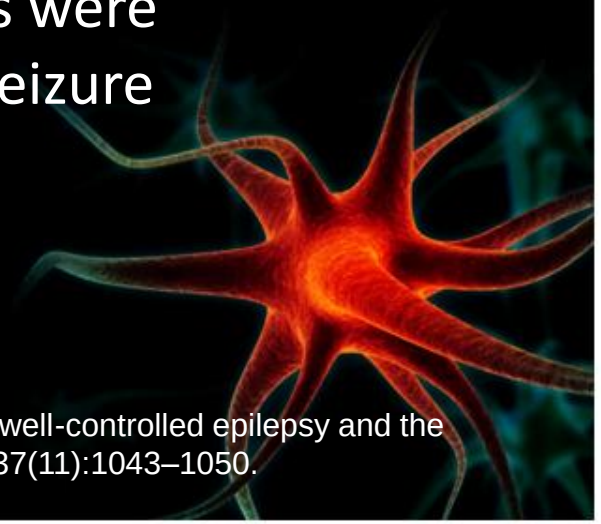
What Is the Risk to My Patient if AED Discontinuance Fails?

- Once seizures recur, they may not respond to treatment as well as they did before discontinuance.
- In follow-up of relapsed patients enrolled in the large MRC AED withdrawal Trial, however, no evidence suggested worsened long-term control on resumption of therapy. After a failed trial of AED discontinuance, 95% experienced a 1-year remission by 3 years of follow-up, and 90% experienced a 2-year remission by 5 years.*

* Chadwick D, Taylor J, Johnson T. Outcomes after seizure recurrence in people with well-controlled epilepsy and the factors that influence it. The MRC Antiepileptic Drug Withdrawal Group. Epilepsia 1996;37(11):1043–1050.

What is the risk? Conti…

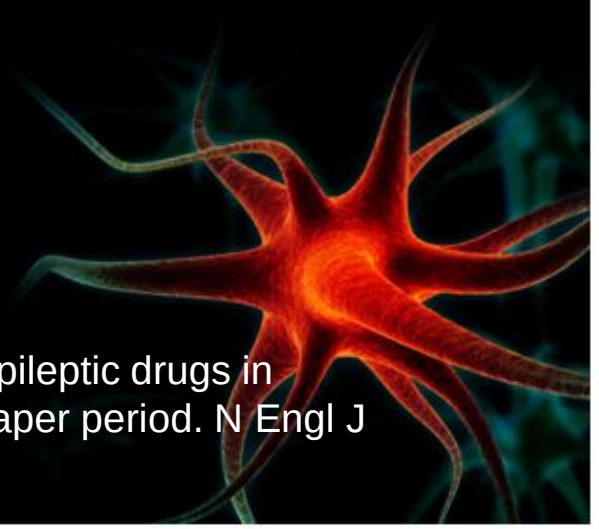
- Status epilepticus,
- Seizure-related injury,
- Motor vehicle accidents
- Sudden unexplained death in epilepsy
- In the MRC AED Withdrawal Trial (N=1013), in which patients were randomized to AED withdrawal or continued therapy, 15 deaths were reported, 13 of which were not related to seizure activity. The two seizure related deaths interestingly occurred in the treatment continuation arm.



* Chadwick D, Taylor J, Johnson T. Outcomes after seizure recurrence in people with well-controlled epilepsy and the factors that influence it. The MRC Antiepileptic Drug Withdrawal Group. Epilepsia 1996;37(11):1043–1050.

How Fast Can AED Be Discontinued?

- No convincing evidence demonstrates that the medication taper rate influences eventual outcome.
- Randomized trial in which a 6-week and a 9-month taper schedule were compared, although relapses occurred earlier in the 6-week group, no difference was found in final relapse rate.*



* Tennison M, Greenwood R, Lewis D, Thorn M. Discontinuing antiepileptic drugs in children with epilepsy: a comparison of a six-week and a nine-month taper period. N Engl J Med 1994;330(20):1407–1410.

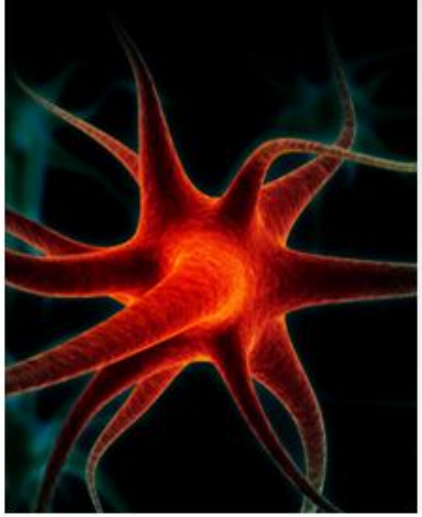
How Fast? Conti…

- In patients taking more than one medication, one drug should generally be withdrawn at a time.
- Phenobarbital and benzodiazepines, may be associated with a higher relapse rate. (no data)

Discontinuation Summary

- Seizure free for 2 years,
- Low recurrence risk factors
- EEG before and after
- Discontinuance
- Individualized benefits Vs risk assessment with patient. (employment and driving)

Print Master



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