When to Start and Stop AEDs

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Objectives

- How to balance risk of seizure/AEDs

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Why we talk this topic?

- For prevent over-treatment with AEDs in epileptics
- What are the appropriate strategies

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Topics

1. When do patients need treatment?
2. Starting treatment
3. Stopping treatment

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Facts

- Decision about when to start and stop therapy vary in their difficulty
- Great majority of epileptics, there is little doubt
- Patients with single, few or infrequent seizures will be doubt

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Factors influencing treatment or not?

- Risk of recurrent seizures
- Risk of seizures itself
- Risk of treatment

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Risk of seizures itself

Risk from AEDs

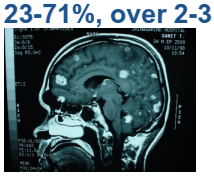
1. Bone disorder
2. Body weight
3. Metabolic acidosis
4. Renal stone
5. Thyroid disorders
6. Lipid disorders
7. Reproductive system

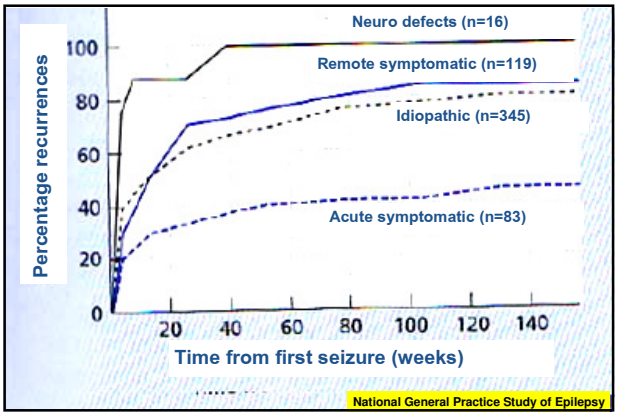
Factors influencing treatment or not?

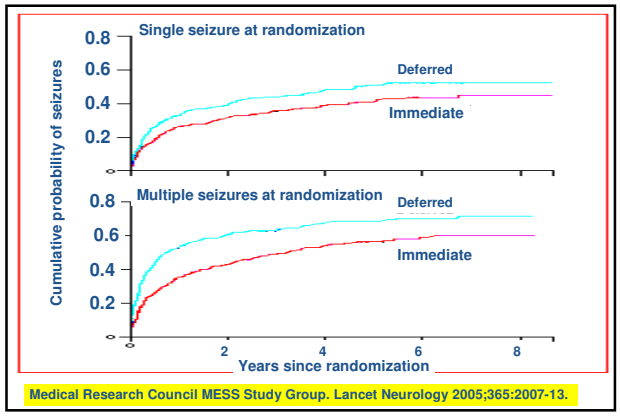
- **Risk of recurrent seizures**
- Risk of seizures itself
- Risk of treatment

Seizure recurrence

- Following a first GTC 23-71%, over 2-3 yrs
- Brain diseases
- Abnormal EEG
- Number of seizures at presentation







Prognostic model for prediction of seizure recurrence for first seizures and early epilepsy

Seizure number	Score
One seizure at presentation	0
Two seizures at presentation	1
Three or more seizures at presentation	2
Add if present	
Neurological disorder/deficit, learning disability, or developmental delay	+1
Abnormal EEG	+1

Medical Research Council MESS Study Group. Lancet Neurology 2006;5:317-22.

Prognostic model for prediction of seizure recurrence

Risk classification group	Final score
Low risk	0
Medium risk	1
High risk	2-4

Medical Research Council MESS Study Group. Lancet Neurology 2006;5:317-22.

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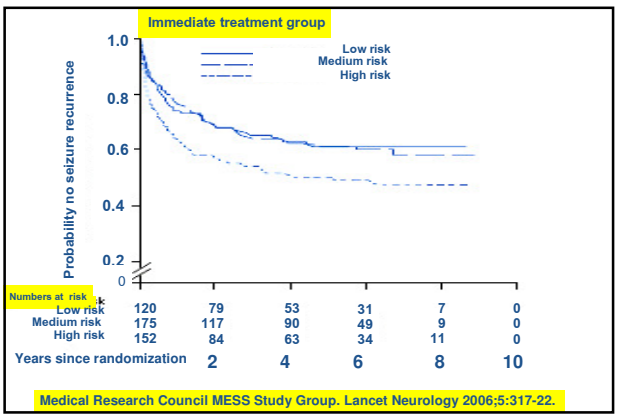

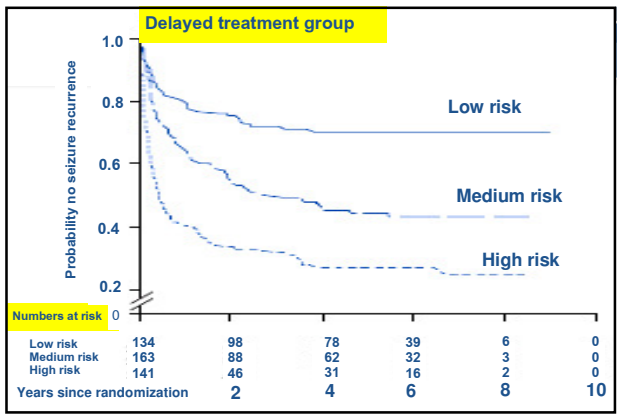

Prognostic model for prediction of seizure recurrence

Medical Research Council MESS Study Group. Lancet Neurology 2006;5:317-22.

Treatment	Probability of seizure by 1 yr	Probability of seizure by 3 yr
Medium risk		
Start	0.23	0.34
Delay	0.34	0.48
High risk		
Start	0.35	0.46
Delay	0.57	0.67

Criteria for starting antiepileptic drug therapy

- Diagnosis of epilepsy must be firm
- Risk of recurrence of seizures must be sufficient
- Seizures must be sufficiently troublesome
- Good compliance must be likely
- Patient has been fully counseled
- Patient's wishes have been fully accounted

Facts

- Patient 70% will attain long-term remission of 2 or more years
- Decision making about whether or not to continue with AEDs is difficult
- AEDs may or may not interact with natural history
- Little information about the risk of chronic effects of AEDs

Metabolic disorders from AEDs

1. Bone disorder
2. Body weight
3. Metabolic acidosis
4. Renal stone
5. Thyroid disorders
6. Lipid disorders
7. Reproductive system

Why do patients stop treatment

- Risk of AEDs
- Stigmatization
- Psychosocial problems

Factors influencing risk of relapse

1. How long seizure free
2. Electro-clinical syndrome
3. Ag at onset
4. Etiology
5. EEG
6. Severity

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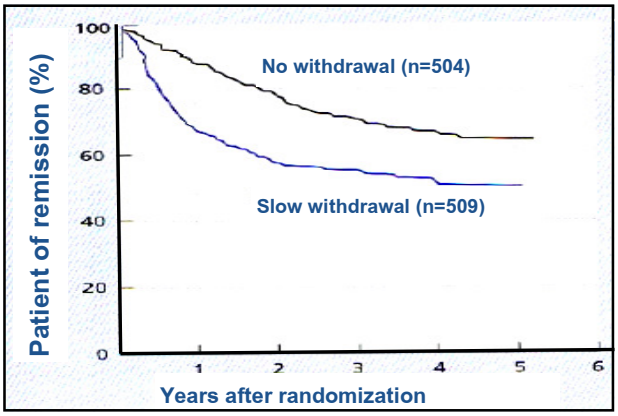
How long seizure-free?

- 2 years or more
- Longer period seizure-free, lower risk of recurrence



Electro-clinical syndrome

- Benign rolandic epilepsy
  - excellent response
  - relapse is almost unknown
- Juvenile myoclonic epilepsy
  - excellent response
  - relapse occur in almost all patient

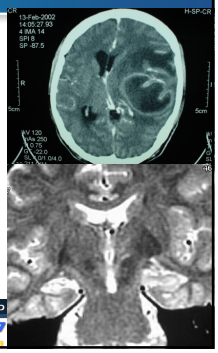
Age at onset

- Childhood 20%

- Adolescent 35-40%

Etiology

- Remote symptomatic
- Idiopathic, cryptogenic



Severity

- Status epilepticus
- Duration
- Number
- Polytherapy
- Previous failed stop AEDs

Electroencephalography

- Usually controversy
- Abnormal EEG while remission
  - Normal
  - Abnormal
- Greater prognostic help in children

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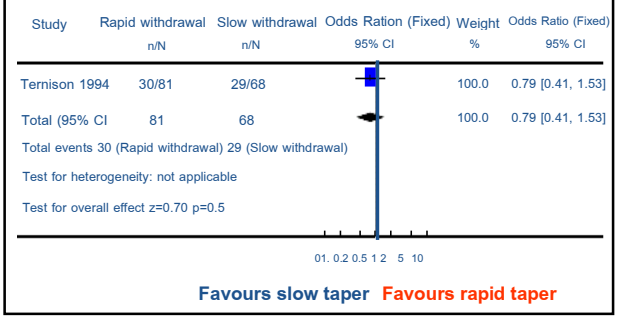
Factors	Score
Starting score	-175
Age at onset > 16 yrs	45
More than 1 AED	50
Attack after start AED	35
GTC (primary or secondary)	35
Myoclonic seizure	50
EEG while remission	
● Not done	15
● Abnormal	20
Duration of seizure-free = D (yr)	200/D

Rapid versus slow withdrawal AEDs



Appropriate strategies

- Need to quantify the benefits of treatment in reducing the risk of seizures and the potential risk for harm

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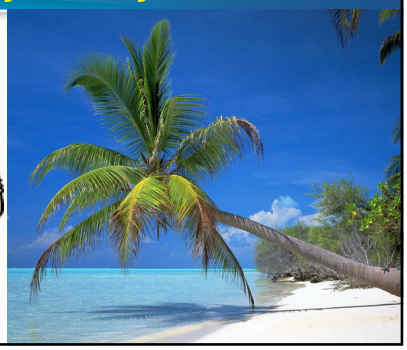
Who do decide start and stop AEDs

Physician

Patient and Family

Thank you for your attention



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- Total score T
- Exponentiation T/100 ($Z = e^{T/100}$) Z

	Probability of seizure recurrence	
	By 1 yr	By 2 yr
On continued treatment	$1-0.89^Z$	$1-0.79^Z$
On slow withdrawal of treatment	$1-0.67^Z$	$1-0.60^Z$

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