

Update in Epilepsy Classification

Kamornwan Katanyuwong M.D.
Pediatrics Department, Neurology Division
Chiangmai University Hospital

การประชุมประจำปีสมาคมโรคลมชัก กรกฎาคม 2555

Classification

What

- A system for representing knowledge about items
- Reflects key characteristics

Why

- Communicates among the clinicians
- Established a taxonomy for the research on epilepsy

Types of classification *In general*

Biology	• species: plant, animal • Immunology
Etiology	• 1° Primary or 2° Secondary
Pathology	• Cancer
Imaging	• Cortical dysplasia
Clinical criteria	• e.g. age of onset, disease course, distribution of symptoms : HA
Mixed	• Movement disorder

Classification

What

- A system for representing knowledge about items
- Reflects key characteristics

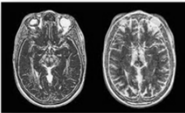
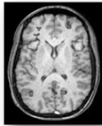
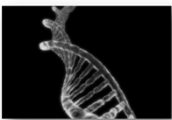
When

- 1970, 1981, 1989
- 2001, 2006
- 2010..., 2013

Problem

- Knowledge \neq Update

New knowledge



Plus neurochemistry, developmental neurobiology, computational neuroscience, electrophysiology, epidemiology

2005-2009

ILAE classification working group

Epilepsia, 51(4):676-685, 2010
doi: 10.1111/j.1528-1167.2010.02522.x

SPECIAL REPORT

Revised terminology and concepts for organization of seizures and epilepsies: Report of the ILAE Commission on Classification and Terminology, 2005-2009

† Anne T. Berg, † Samuel F. Berkovic, § Martin J. Brodie, ¶ Jeffrey Buchhalter, #* J. Helen Cross, †† Walter van Emde Boas, ††† Jerome Engel, §§ Jacqueline French, ¶¶ Tracy A. Glauser, ## Gary W. Mathern, * Solomon L. Moshé, † Douglas Nordli, †† Perrine Plouin, and † Ingrid E. Scheffer

Clinical seizure type	EEG sz type	EEG interictal expression
II. AF Epileptic seizures 1981		
1. Partial (focal, local) seizures		
Simple partial sz		
<ul style="list-style-type: none"> - with motor signs - with somatosensory symptoms - with autonomic symptoms and signs - with psychic symptoms 		
Complex partial sz		
<ul style="list-style-type: none"> - start with SPS followed by impairment of consciousness - with impairment of consciousness at onset 		
Partial sz evolving to 2^o gen sz		
<ul style="list-style-type: none"> - SPS → GTC - CPS → GTC - SPS → CPS → GTC 		
2. Generalized sz (convulsive and non-convulsive)		
Absence, Myoclonic, Clonic, Tonic, Tonic-clonic, Atonic		
3. Unclassified epileptic sz		
4. Prolonged or repetitive seizure (status epilepticus)		

What has been changed for ILAE 2010 1.

1981	2010
<u>Partial(focal/local seizure)</u>	<u>Focal seizure</u>
<ul style="list-style-type: none"> • Simple partial seizure • Complex partial seizure (consciousness) 	<ul style="list-style-type: none"> • Originating within networks limited to one hemisphere

What has been changed for ILAE 2010 2.

1981	2010
<u>Partial(focal/local seizure)</u>	<u>Focal seizure</u>
<ul style="list-style-type: none"> • Simple partial seizure • Complex partial seizure (consciousness) 	<ul style="list-style-type: none"> • Characterized according to <ul style="list-style-type: none"> - Aura - Motor - Autonomic - <u>Awareness/Responsiveness</u> <ul style="list-style-type: none"> : altered (dyscognitive) : retained

What has been changed for ILAE 2010 3.

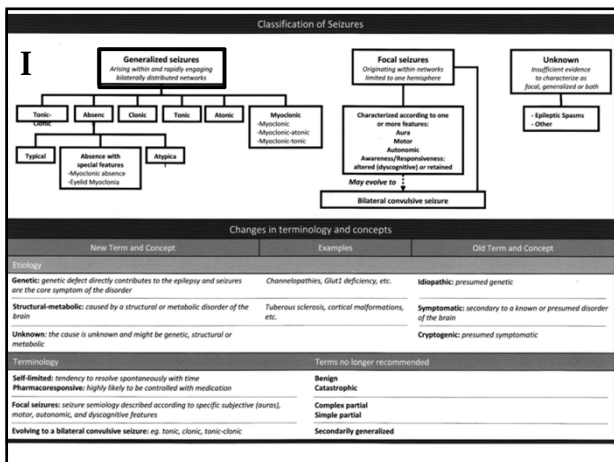
1981

2010

Partial(focal/local seizure)

- Partial seizure evolving to secondarily generalized seizure

Focal seizure evolves to bilateral convulsive seizure
: eg. tonic, clonic, T-C



What has been changed for ILAE 2010 4.

1981

2010

Generalized seizures
(convulsive and non convulsive)

- : absence,
- myoclonic,
- clonic,
- tonic,
- tonic-clonic,
- atonic

Generalized seizures
: absence
- typical
- atypical
- absence with special features ; myoclonic absence, eyelid myoclonia
: myoclonic: myoclonic, myoclonic-atonic, myoclonic-tonic
: other = the same

What has been changed for ILAE 2010 5.

1989	-----	2010
1. Localization-related	-----	
1.1 idiopathic	← [1981]	
: specific syndromes	←	
1.2 symptomatic	←	
: specific syndromes	←	
1.3 cryptogenic	←	
: specific syndromes	←	
2. Generalized	-----	
2.1.....2.2.....2.3.....	[1981]	
3. Undetermined whether focal or generalized		
: specific syndromes SMEI, LKS, CSWS		
4. Special syndromes		
: eg. FC, reflex epilepsy		

Etiology

1989: Mixed of two dichotomies
Onset and Etiology

What has been changed for ILAE 2010 5.

1989	2010
<u>Idiopathic:</u>	<u>Genetic:</u>
<ul style="list-style-type: none"> • Presumed genetic, • No underlying cause other than a possible hereditary predisposition 	<ul style="list-style-type: none"> • Direct result of a <u>known</u> or presumed genetic defect in which seizures are the core symptom of the disorder • eg. Channelopathies, Glut1 def

What has been changed for ILAE 2010 6.

1989	2010
<p><u>Symptomatic:</u> Consequence of a known or suspected disorder of CNS</p>	<p><u>Structural/metabolic:</u></p> <ul style="list-style-type: none"> • Proven to be associated with an increased risk of developing epilepsy, may be acquired or genetic in origin • eg. stroke, trauma, infection, cortical malformation or may be genetic origin (TSC)

What has been changed for ILAE 2010 7.

1989	2010
<p><u>Cryptogenic:</u></p> <ul style="list-style-type: none"> • Cause is hidden or occult, • Presumed to be symptomatic 	<p><u>Unknown:</u></p> <ul style="list-style-type: none"> • Not yet identified • Genetic vs Structural defect (metabolic)

Terms no longer recommended

- Benign ☒
 - self-limited: tendency to resolve spontaneously with time
 - pharmacoresponsive: highly likely to be controlled with medication
- Catastrophic ☒
 - pharmacoresistant

Debate on new organization of seizures and epilepsies 2010

- Many comments
 - : Disagree; in all, in some details
 - : Agree; in all in some details
 - : Suggest new options;
 1. compromised ideas with ways to approach,
 2. new classification,
 3. their own classification (their new update)

No option



The Near Future

- Commission on Classification (2009-2013) is preparing the final draft, to be submitted for approval by ILAE general assembly at 2013 International Epilepsy Congress

Thank you for your attention

