KEY TO ABBREVIATIONS & DESCRIPTIVE TERMS IN ICU EEG

Adapted from: Journal of Clinical Neurophysiology, Volume 22, Number 2, April 2005

RHYTHMIC & PERIODIC PATTERNS

LPDs: lateralized periodic discharges
BIPDs: bilateral independent periodic discharges
GPDs: generalized periodic discharges
RDA: rhythmic delta activity
LRDA: lateralized rhythmic delta activity
GRDA: generalized rhythmic delta activity

For focal patterns, location is described with these prefixes:
R: right; L: left; A: anterior; P: posterior.
Hence: RA-LRDA is "right anterior quadrant LRDA".

Other abbreviations in common use
PLEDs: periodic lateralized epileptiform discharges (aka LPDs)
BIpleDs: bilateral independent periodic epileptiform discharges (aka BIPDs)
FIRDA: frontal intermittent rhythmic delta activity
GPEDs: generalized periodic epileptiform discharges (aka GPDs)
SIRPIDs: stimulus induced rhythmic, periodic, or ictal discharges
Mf: multifocal
SW: spike-wave or sharp-wave

Modifiers
SI: stimulus induced; used as a prefix (e.g. SI-GPDs)
Plus (+): additional features which make the pattern "more ictal-appearing":
+F: plus fast activity
+S: plus spike/sharp-wave discharges
+R: plus rhythmic activity

Amplitude
'very low': <20uv; 'low': 20-50uv; 'medium': 50-200; 'high': >200.

Duration
'very brief': <10 sec; 'brief': 10-60 sec; 'intermediate duration': 1-1.5 min; 'prolonged': 5-60 sec; 'protracted': >60min.

Persistence: For periodic/rhythmic patterns (% of epoch)
'rare': <1%; 'occasional': 1-10%; 'frequent': 10-50%; 'abundant': 50-90%; 'continuous': >90%

Persistence: For sporadic (non-periodic) epileptiform discharges
'rare': <1/hr; 'occasional': 1/min-1/hr; 'frequent': >1/min; 'abundant': >1/10 sec (i.e. at least one per typical EEG page)

GENERAL COMMENTS ON INTERPRETATION OF ICU EEG PATTERNS

Though all EEG patterns require clinical correlation for interpretation, the following comments regarding the patterns mentioned in the above abbreviations generally apply:

1. Rhythmic and periodic patterns (LPDs PLEDS, BIpleDs, GPEDs, RDA): Commonly seen in patients with brain injuries, especially in the acute setting. These patterns share some features with electrographic seizures, but their clinical significance is incompletely known and probably varies. They do signify increased risk for seizures, and in some cases cause or exacerbate neurological deficits (e.g. impaired consciousness).
2. '+' modifiers: describe additional features (indicated by a suffix) which make PEDs and RDA more closely resemble seizure activity (e.g. RDA+S, rhythmic delta activity with associated epileptiform spikes).
3. 'SI' prefix, and 'SIRPIDs': Indicate patterns correlated with stimulation, including rhythmic and periodic patterns (see #1), and 'ictal activity', i.e. stimulus-induced seizures. Stimulus induce patterns are of uncertain clinical significance.
4. Electrographic seizures:
   Although there are exceptions, the primary features which identify an EEG pattern as a (definite) seizure are: distinct beginning and end; evolution in frequency and morphology; or any regular rhythmic or repetitive pattern at >3Hz. More technically, though again there are exceptions, EEG patterns may be identified as seizures which satisfy any one of the three criteria:
   a. Repetitive epileptiform discharges at >3Hz
   b. Repetitive epileptiform discharges at <3Hz + secondary criterion (below)
   c. Sequential rhythmic or periodic waves at >1Hz and unequivocal evolution in frequency (increase or decreasing by at least 1Hz), morphology, or distribution

Secondary criterion: Significant clinical improvement or restoration of previously absent normal EEG patterns (e.g. posterior-dominant "alpha" rhythm) temporally coupled to acute administration of a rapidly acting AED.