AES Resident EEG Course Recordings Content Syllabus

Section I: Basics of neurophysiology and Technical Aspects of EEG

Learning Objectives:
At the end of the session, learners will be able to:
1. Explain the basic elements of EEG physiology
2. Use appropriate terminology when describing an EEG
3. Recognize common EEG montages
4. Identify and explain eye movements on EEG
5. Determine the polarity of a focal finding on EEG
6. Show how filters and other settings can affect EEG interpretation

Part I: Physiology and Terminology
1. Mini-lecture: EEG Physiology Basic principles of Neurophysiology and neurosciences as applicable to EEG
2. Mini-lecture: EEG terminology- 10-20 system, frequency bands, channels, montages

Part II: Polarity and Filters
1. Mini-lecture: Polarity rules
2. Mini-lecture: Filters and other Settings

Section II: Normal adult EEG

Learning Objectives:
At the end of the session, learners will be able to:
1. Recognize normal awake EEG patterns
2. Recognize normal asleep EEG patterns
3. Recognize common artifacts
4. Recognize common normal variants

Part I: Physiology and Terminology
1. Mini-lecture: Normal awake patterns
2. Mini-lecture: Normal sleep patterns

Part II: Artifacts and Variants
1. Mini-lecture: Common artifacts
2. Mini-lecture: Common normal variants
Section III: Abnormal EEG

Objectives
At the end of the session the learners will be able to
1. Identify common non-epileptiform abnormalities on EEG
2. Identify common epileptiform abnormalities, and describe common pitfalls in interpretation
3. Describe features of and identify common electrographic ictal pattern
4. Describe the EEG (and clinical) criteria of status epilepticus
5. Describe the major application and common EEG findings in inpatient neurology service

Part I. Non-Epileptiform EEG abnormalities
1. Mini-lecture: Slowing Focal and Generalized
2. Mini-lecture: Non-epileptiform, non-slowing abnormalities of EEG

Part II. Epileptiform abnormalities
1. Mini-lecture: Focal and generalized
2. Mini-lecture: Seizure pattern and status epilepticus

Part III. Clinical application of EEG in routine practice
1. Mini-lecture: Abnormal EEG on hospital consultative service (including clinically relevant specific patterns)

Section IV: Introduction to Neonatal and Pediatric EEG and Electroclinical Syndromes

Learning Objectives:
At the end of the session, learners will be able to:
1. Identify 3 differences between pediatric and adult EEG
2. Recognize a normal neonatal awake EEG pattern
3. Recognize a normal neonatal asleep EEG pattern
4. Identify 2 differences between “benign” and “malignant” childhood epilepsies

Part I: Pediatric EEG
1. Mini-lecture: Pediatric/Neonatal EEG Basics

Part II: Common Electroclinical syndromes
1. Mini-lecture: Pediatric Epilepsy spectrums
   a. Benign syndromes -> Encephalopathy
   b. Febrile Sz -> GEFS+ -> Dravet
   c. Absence -> Atypical Absence -> JME
   d. BECTs -> CSWS -> Landau-Kleffner
Section V: Critical Care EEG

Learning Objectives:
At the end of the session, the learner will be able to:

1. Discuss the ACNS ICU-EEG nomenclature
2. Identify common tools used in quantitative EEG
3. Describe background features relevant to the interpretation of ICU-EEG
4. Recognize common artifacts present in ICU-EEG
5. Describe the major rhythmic and periodic patterns encountered in ICU-EEG
6. Define electrographic seizures, non-convulsive status epilepticus, and the concept of the ictal-interictal continuum
7. Discuss the applications of ICU-EEG in common etiologies affecting critically ill patients

Part I: Fundamentals of ICU-EEG

1. Mini-Lecture: ICU-EEG Nomenclature overview
2. Mini-lecture: Quantitative EEG overview
3. Mini-Lecture: Basic background features and ICU-EEG artifacts
   1. ICU artifacts

Part II: ICU EEG patterns, seizures, status epilepticus, and ictal-interictal continuum

1. Mini-Lecture: Generalized rhythmic and periodic patterns (GRDA, GPD)
2. Mini-Lecture: Lateralized rhythmic and periodic patterns (LRDA, LPD)
3. Mini-Lecture: Definitions and basic overview of IIC, electrographic seizures, and NCSE

Part III: Indications and Clinical Applications of ICU-EEG in Major ICU Etiologies

1. Mini-Lecture: Indications and common clinical applications