

Artificial Intelligence, EEG and Clinical Outcomes in Intensive Care Units

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Abstract:

In this talk, we will discuss the use of electroencephalograms (EEG) in Intensive Care Units (ICU). We will review the use of EEGs as a multi-dimensional biomarker. We will review applications of artificial intelligence (AI) and machine learning (ML) for each type of biomarker. We will review cases highlighting biomarker usage in clinical management.

Continuous EEG (CEEG) is an invaluable tool in the ICU since it yields multi-multi-dimensional biomarkers. AI can overcome or ameliorate limitations of CEEG applications in the ICU. Real-time analysis and interpretation of CEEG data is essential to influence clinical decision-making and clinical outcomes. ML models and AI integration into the decision-making process provides standardization and automation. Opportunities exist for the integration of real-time annotation and AI-based decision-support to achieve better patient outcomes.

Biography:

Dr. Desai is a board-certified neurologist, neuro-intensivist, neurophysiologist & ICU-Electroencephalographer. She joined University of New Mexico in 2021. She holds a background in Data Science. She pursued her training in Neurocritical Care at University of Maryland & R Adam Cowley Shock Trauma Center, Baltimore, MD. She also gained expertise in Critical Care EEG and Clinical Neurophysiology at Northwestern University, Chicago, IL.

Dr. Desai is committed to clinical and academic excellence and has served as a role model and a mentor for trainees and students. Her clinical interests lie in utilizing precision medicine and personalized medicine for her patients with an emphasis on a shared decision making process. Her philosophy in clinical care is to be able to support the patients and their families in one of the most difficult and life-changing moments of their life, in addition to providing superlative care for her patients.

Her research and academic interests pertain to applications of multimodal monitoring tools to utilize biomarkers of SBI to predict neuro-worsening, clinical response and clinical outcomes. Her research interest pertains to utilizing informatics tools to analyze complex data sets. Her additional research and clinical interest topics involve tracheostomy in neuro-emergencies, acute liver failure, status epilepticus, severe traumatic brain injury and aneurysmal subarachnoid hemorrhage. She has led several multi-center clinical trials and collaborations for the institution.