

JOINT BIOMEDICAL ENGINEERING SEMINAR SERIES



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UWM, EMS 295



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ASSESSING THE UTILITY OF EEG COHERENCE IN EVALUATION OF TREATMENT OF RETT SYNDROME WITH NNZ-2566

Rett syndrome is a progressive neurological disorder that primarily affects females and has an onset in early childhood following a seemingly normal development in the first 6-18 months of life. It occurs in 1 in 10,000 to 1 in 15,000 live female births and is believed to be caused by a mutation in the X-linked gene MECP2. Following the 1st year of development, the patients experience rapid decline with loss of purposeful hand use and spoken communication. Many patients experience recurrent seizures, a variety of motor problems including increased muscle tone and abnormal movements. Affected children often develop autistic-like behaviors, breathing irregularities, feeding and swallowing difficulties and growth retardation. These individuals are never able to provide fully for their own needs, with most requiring life-long medical care and 24-hour a day supportive care as they grow older. Neuren Pharmaceuticals conducted a multi-center Phase 2 double-blind placebo-controlled clinical trial in subjects aged 16 to 45 years with Rett syndrome, in which treatment with trofinetide (NNZ-2566), a synthetic analog of IGF-1[1-3], showed clinical improvement in many of the core symptoms of Rett syndrome. As a subset of data analysis, the study also explored the utility of the electroencephalographic (EEG) coherence methodology in quantifying neurophysiological changes in brain functional connectively associated with Rett syndrome & in evaluation of treatment with NNZ-2566. This presentation will focus on the lessons learned from the preliminary EEG coherence analysis, and the recommendations for future EEG studies in Rett syndrome population.

Bio: Dr. Olga Imas is an Associate Professor of Biomedical Engineering at the Milwaukee School of Engineering, where she teaches a variety of courses in biomedical engineering including digital signal processing, signals and systems analysis, electric circuits, computer programming with MATLAB, medical imaging systems, and biomedical senior design. She is a founder and CEO of iBioTekk, LLC. consulting agency. Olga has over twenty peer-reviewed publications, five patents. Her professional interests include traumatic brain injury, stroke and ischemic disease, physiological mechanisms of Alzheimer's disease, and anesthesia monitoring.