

Application of Armeo Device in Treatment of Dysgraphia and Other Developmental Dysability

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After experienced stroke, traumatic brain injury, or other neurological or muscular damages, large numbers of patients still do not have neuromuscular control in hemiparetic extremity. Because of the weakness of muscles and inability to conquer with gravity, usage of arm is disabled. Armeo neutralizes weight of arm, enable usage of remaining control in both arms and hands by following exercises which represent real life situations in 3D simulations. Software accepts trajectory of patient's arm and wrist movement and with that enables therapists to evaluate patient's pattern of coordination and improvement during treatment. Device is easily adaptable to patient's needs and it is possible to be used also without help of therapist. Armeo speeds up re (habilitation) by combining adaptable support for arm with grabber which is very sensitive and stimulates everyday activities. Data's for every patient can be electronically archived, which enables evaluation and follow up of improvements in treatment. Application of Armeo in situations with head injuries described till now can be widen, for the first time by our opinion, on application of Armeo in habilitation and early stimulant treatment in children with graphomotor dysgraphia, dyspraxia, cerebral paralysis (CP), autism and intellectual dysability, with respect to hypotonic muscular hand and inadequate coordination. By seasonable application of this device in treatment of these children, their hand and arm motoric can be improved, which would definitely affect quality of their everyday activities and ability to learn and carry out school tasks.

disorder, which showed EEG abnormalities with or without clinical epileptic seizures.

Method: A total of 143 patients of developmental disorder (autism spectrum disorders: ASD, attention deficit hyperactivity disorder: ADHD, intellectual disability: ID), who have been treated and followed-up at our outpatient hospital (from 3 to 28 years, mean age 12.8 years) were included in this study. Each participant's EEG had been recorded approximately every 6 months under sleep conditions. We examined for the therapeutic effect including of behavioral and psychiatric improvement to anti-epileptic drugs.

Results: EEG abnormalities were present in 76.0%, epilepsy was complicated in 55.0% of ASD. EEG abnormalities were complicated in 75.0%, epilepsy was complicated in 25.0% of ADHD. All patients showed EEG abnormalities on frontal areas. Although, there is no statistically significant difference in the effectiveness of anti-psychotic drugs or anti-epileptic drugs, all patients in the both combined patients were more improved. VPA and CBZ is widely used as a mood stabilizer in children with developmental disorder, particularly among those with seizure disorders and abnormalities in the EEG. In ADHD, EEG improvement with antiepileptic drug treatment showed a high correlation with behavioral improvements as shown by ADHD-RS and GAF scores. In ADHD, EEG improvement with antiepileptic drug treatment showed a high correlation with behavioral improvements and EEG findings.

Conclusion: EEG abnormalities were present in 76.0%, epilepsy was complicated in 55.0% of ASD. EEG abnormalities were complicated in 75.0%, epilepsy were complicated in 25.0% of ADHD. All patients showed EEG abnormalities on frontal areas. Anti-epileptic drug is effective in developmental disorder who had EEG abnormalities even though without clinical epileptic seizures. In the cases of poor effect of anti-psychotic drugs associated with EEG abnormalities, anti-epileptic drugs may be an alternative treatment in developmental disorder. It is necessary to review by the quantitative behavioral and EEG assessment after treatment of anti-epileptic drugs as an issue in the future by prospective intervention.

Session P9. Neuropharmacology

Evaluation of Pharmacotherapy for Developmental Disorder

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Purpose: Children with developmental disorder often suffer from epilepsy and paroxysmal EEG abnormality. In pharmacotherapy for developmental disorder, not only anti-psychotic drugs, a combination of anti-epileptic drugs have an effective for behavioral and psychiatric symptoms in many cases. Evidence of pharmacotherapy for developmental disorder associated with abnormal EEG has not been established. Purpose of this study is to evaluate the usefulness of anti-epileptic drugs in developmental

The Role of Interaction Between Cannabinoid and Vanilloid Systems on Hippocampal Synaptic Plasticity in Rats

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Long-term potentiation (LTP) has been most thoroughly studied in the hippocampus, which has a key role in learning and memory. Endocannabinoids are one of the endogenous systems that modulate this kind of synaptic plasticity. It has been reported that delta-9-tetrahydrocannabinol (Δ-9-THC), the major pharmacologically active molecule found in the plant Cannabis sativa, bind two types of G-protein-linked cannabinoid receptors (CB1 and CB2) that have been identified using molecular and