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#### EV1123

### Depression and Parkinson's disease: Biological therapies

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**Introduction** Depression occurs in approximately 40% of patients with Parkinson's disease. Parkinson's disease is commonly associated with psychiatric morbidity, which includes depression, anxiety, and dopaminergic psychosis. These compound the patient's predicament. Fortunately, a variety of effective treatments are available.

**Objective** The purpose of this e-poster is to provide an update of the research regarding depression in Parkinson's disease.

**Methods** Describe a case report. A 56-year-old man, with previous diagnosis of Parkinson's disease. We used SSRIs, but they were not enough to successful treatment so we decided to use ECT.

**Results** Our patient failed to respond to medication or develop intolerable medication side effects. Electroconvulsive therapy (ECT) should be considered for this group of patients. Contrary to popular belief, ECT is a widely used and safe treatment for depression when medication fails. ECT has been shown to be effective and safe in PD for treating both depression and dopaminergic psychosis. Several studies also report varying periods of motor improvement following ECT in PD. A study is currently underway at UBC to examine this phenomenon in a controlled setting. ECT improves depression, may permit a reduction in antidepressant medications, and has intrinsic antiparkinsonian properties.

**Conclusions** ECT, has repeatedly been shown to have beneficial effects in PD, but has never gained acceptance as a clinical treatment option. We review the literature on the use of ECT in PD, pointing out that ECT has beneficial effects on both the core motor symptoms of PD as well as the commonly occurring psychiatric co-morbidities.

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#### EV1124

### The role of neuroplasticity in the treatment of cognitive impairments by means multifactor neuro-electrostimulation of the segmental level of the autonomic nervous system

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**Introduction** Cognitive deficit is a consequence of organic lesions of the central nervous system. Activation of neuroplasticity is a way of effective treatment. There is a suppose that the autonomic nervous system (ANS) involves in the regulation of neuroplasticity.

**Objectives** We developed a technology for non-invasive electrical stimulate segmental and suprasegmental parts of ANS [1].

**Methods** Developed technology is implemented in the "SYMPATHOCOR-01" device. The device produces spatially distributed field of current pulses between two multiple electrodes

located on the neck. The targets of impact are cervical ganglia of the sympathetic trunk and vagus nerve.

**Results** The restoration of blood supply in artificial ischemia calf muscles and recovery of behavior patterns during acute phase of the adjustment disorder were received as a result of application technology in experiments on rats [2]. An increase global neurometabolic activity on SPECT was shown in clinical studies [2]. Application device for two weeks in children with ADHD led to reduction of inattention and hyperactivity symptoms [2].

**Conclusion** We suggest that the demonstrated clinical effects are the results of activate of neuroplasticity by impact on ANS structures. It is necessary to conduct fundamental studies by means of neurovisualization methods (fMRI, PET) for the confirmation action of these mechanisms.

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#### EV1125

### Modified electroconvulsive therapy in pseudocholinesterase deficiency: A case report

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**Introduction** Pseudocholinesterase (PCHE) deficiency is an inherited condition, in which recovery from anesthetic agents like succinylcholine and mivacurium is slow and complicated with prolonged paralysis of respiratory muscles in susceptible patients. Succinylcholine is used very frequently as a muscle relaxant during the procedure.

**Objectives** In Bakirkoy research and training hospital for psychiatric and neurological diseases, 24.310 patients were hospitalized for acute conditions and 3490 of these patients were treated with electroconvulsive therapy (ECT) in 3 years. We present a very rare case that we encountered in our practice; a severe PCHE deficiency case that could have complicated the modified ECT procedure unless necessary precautions were taken.

**Aims** Detection of PCHE levels of all patients eligible for ECT is part of our pre-ECT assessments procedure, and the case presented here shows the benefits of this method.

**Methods** The patient is a 29-year-old woman, with a 15 year history of schizophrania. She was hospitalized for homicidal risk and refusal of treatment. Inadequate clinical response with pharmacological interventions and continuous aggressive excitations directed us to consider ECT.

**Results** After the detection of PCHE deficiency (PCHE level: 126 U/L), we performed the modified ECT with propofol and rocuronium instead of succinylcholine as usual. Sugammadex 100 mg was used for fastening the recovery. Response to treatment, which is recorded with positive and negative syndrome scale, was good and we completed 9 ECT sessions without complication.