

**P0318**

Extended maintenance electroconvulsive therapy for more than 9 years

K. Kosidou, M. Ioannou, S. Andersson, P. Afram. *Department of Psychiatry, Hospital of Sodertalje, Sodertalje, Sweden*

Maintenance electroconvulsive therapy (M-ECT) has been increasingly used to prevent relapse in patients with major psychiatric disorders. However, little is known about the long-term benefits and risks of M-ECT.

We report on a patient with recurrent episodes of depression with psychotic features who has been successfully treated with M-ECT for 9 years.

**Case-report:** An 83-year old female patient was first admitted to our department at the age of 72 years, after a suicide attempt. She was diagnosed as having psychotic depression and received antidepressive medication with moderate effect. Relapses were multiple despite continuation medication. The failure of administered antidepressive medication to prevent relapse, necessitated the use of index, continuation and eventually maintenance ECT. The additional parallel use of mood stabilisers (lithium and lamotrigine) allowed us to lower the frequency of M-ECT. Attempts to discontinue M-ECT led to relapse and M-ECT is now seen as a life-long treatment for that patient. To date (2007) our patient has received 450 treatments. Her depression remains in remission over the last years. Despite the unusual large number of administered ECT, her memory function appears to be unimpaired and repeated assessments with the MMSE test have not revealed cognitive deterioration.

**Discussion:** For some patients long-term M-ECT is the only effective treatment to prevent relapse in depression. The risks of long-term M-ECT, especially regarding its possible adverse effects on cognition, are still under research.

Our case-report provides support for the safety of expanded M-ECT which, in some cases, can be seen as a life-long treatment.

**P0319**

Electrophysiological effect of low-frequency rTMS in schizophrenic patients with auditory hallucinations

T. Novak<sup>1,2</sup>, M. Klírova<sup>1,2</sup>, M. Brunovsky<sup>1,2</sup>, B. Tislerova<sup>1,2</sup>, J. Cermak<sup>1,2</sup>, J. Horacek<sup>1,2</sup>. <sup>1</sup> *Prague Psychiatric Center, Prague, Czech Republic* <sup>2</sup> *Center of Neuropsychiatric Studies, Prague, Czech Republic*

**Background and Aims:** Number of previous studies reported that low-frequency repetitive transcranial magnetic stimulation (rTMS) diminishes treatment-resistant auditory hallucinations. However, little is known about the electrophysiological effect on regional functional activity subsequent to the rTMS treatment.

**Methods:** Eighteen schizophrenic patients with antipsychotic-resistant auditory hallucinations were randomized to either active (n=9) or sham (n=9) rTMS. Low-frequency rTMS (0.9Hz, 100% MP, 1200 stimuli per session) was administered over the left temporo-parietal region for ten days. In case of sham rTMS a coil was tilted at 90°. EEG data were recorded within three days before and after rTMS treatment. The localization of the differences in electrical activity (current density) was assessed by voxel-by-voxel paired t-tests of the LORETA (low resolution brain electromagnetic tomography) images. The clinical effect was assessed by the Positive and Negative Syndrome Scale (PANSS), Hallucination Change Scale

(HCS) and the Auditory Hallucination Rating Scale (AHRS) by a rater blind to the treatment condition.

**Results:** After two weeks of treatment, both HCS and AHRS scores were significantly improved for patients receiving active rTMS compared to the sham group. LORETA analysis revealed a decrease of current densities in high-frequency bands (alpha 2, beta 1 and beta 2) in the left frontal, temporal and parietal lobes in case of active group. No significant differences in electrical activity were observed in sham group.

**Conclusions:** Real rTMS but not sham stimulation attenuated an auditory hallucinations and was associated with a decrease of activity in high-frequency bands on the left hemisphere.

**P0320**

Use of electroconvulsive therapy at a University Hospital in Lisbon, Portugal: A 5-year naturalistic review

S.M. Oliveira, D.M. Barrocas, D.F. Guerreiro. *Psychiatry Department, Santa Maria Hospital, Lisbon, Portugal*

**Background and Aims:** Electroconvulsive therapy (ECT) is a safe and effective treatment for severe and persistent depression, bipolar disorder and schizophrenia. The authors pretend to describe their experience and evaluate the efficacy of the technique on clinical practice.

**Methods:** We present our experience of ECT use at a University Hospital in Lisbon, Portugal, over the course of 5 years, thought a naturalistic review.

**Results:** During the study period, 81 patients received ECT. ECT was conducted under the supervision of consultant psychiatrist and anaesthetist with continuous monitoring during and after the procedure. Bitemporal electrode placement was used twice or thrice weekly. Most commonly used sleep induction agents were thiopental and propofol. The average number of ECTs administered per patient was 8. Patients who received ECT were diagnosed unipolar major depression (49.4%), bipolar disorder (29.6%), schizophrenia (19.8%) and schizoaffective disorder (1.2%). Mean age of patients who received ECT were 44 years, in a great range between 16 and 81 years-old. The majority was female (65.4%). Almost all patients showed improvement in their clinical condition (90%). The most frequent complication was bradycardia followed by hypertension. No major complication was observed in any of the patients. Thirty-three percent of patients repeat the ECT along those 5 years. When support ECT started to be realized, recurrence decreased.

**Conclusions:** Our study demonstrates the effectiveness of ECT. We strongly recommend following guidelines to ensure patient safety and minimizing side effects. This will ensure better patient acceptability and compliance.

**P0321**

Electroconvulsivotherapy in the elderly, indications, risks and side-effects

S. Pereira<sup>1</sup>, S. Guimarães<sup>2</sup>, A. Marques<sup>1</sup>, S. Borges<sup>3</sup>. <sup>1</sup> *Psychiatric Clinic CHVNGaia-Espinho, Oporto, Portugal* <sup>2</sup> *Povoa-Vila Conde Clinic-Magalhaes Lemos Psychiatric Hospital, Oporto, Portugal* <sup>3</sup> *Psychiatric Clinic-Viseu Hospital, Oporto, Portugal*

**Introduction:** Major depression is one of the most prevalent diagnoses in the elderly and represents an important cause of morbidity and mortality in this group. There exists evidence that electroconvulsive therapy (ECT) is particularly efficient and safe in the elderly patient.

**Methods:** Bibliographic review on Pubmed, Medline and Text-books of Psychiatry

**Results:** The use of ECT in the psychogeriatric patient has indication in episodes of major depression, mania, schizophrenia and other psychotic disorders, and also when there exists concomitant neurological (affective disorders in dementia, Parkinson's disease, and post stroke depression). or other mental syndromes (catatonia or delirium secondary to various medical conditions).

Because the geriatric population suffers multiple organic comorbidities, the following risk factors require evaluation: history of head trauma, focal or general neurological complaints (recent stroke, intracranial tumour, hypertension or aneurysm), angina, congestive heart failure, bone fractures, osteoporosis, spinal disease and oesophageal reflux.

The following adverse effects have been described: cardiac ischemia, arrhythmia (tachycardia and bradycardia), hypertension, pneumonia secondary to aspiration of gastric contents, musculoskeletal and dental injury, increase of intraocular pressure, post ictal confusion and disorientation, impaired retrograde and anterograde memory.

**Conclusion:** The indication, risks factors and possible adverse effects of ECT should be carefully evaluated in the elderly patient.

### P0322

Absence of cognitive side-effects after ultrabrief electroconvulsive therapy

P. Sienaert<sup>1</sup>, K. Vansteelandt<sup>2</sup>, K. Demyttenaere<sup>2</sup>, J. Peuskens<sup>2</sup>.  
<sup>1</sup>ECT Department, University Psychiatric Center-Catholic University of Leuven, Leuven, Belgium <sup>2</sup>University Psychiatric Center-Catholic University of Leuven, Leuven, Belgium

**Background and Aims:** Cognitive side-effects are the most troublesome side-effects after electroconvulsive therapy (ECT). Efforts to reduce side-effects, maintaining a high efficacy are ongoing. Cognitive effects of bifrontal and unilateral ultra-brief pulse ECT were compared, in the treatment of patients with a depressive episode.

**Method:** Sixty four patients with a depressive episode that was highly medication refractory, and with a high degree of comorbidity completed a course of bifrontal ECT at 1.5 times seizure threshold (ST) or unilateral ECT at 6 times ST, with a pulse width of 0.3 msec by random assignment. An extensive cognitive battery was performed at baseline and at 1 and 6 weeks post-treatment, by a blinded rater.

**Results:** At the end of the treatment course, 78.1% of patients responded ( $\geq 50\%$  decrease HDRS-scores). There was a significant increase in global cognitive function (MMSE), verbal memory (RAVLT), attention (CPT), executive function (WCST) and autobiographical memory (AMI). Patients reported a significant increase of their subjective memory function both during and after the ECT-course. There were no significant differences between the patients given bifrontal ECT and those given unilateral ECT.

**Conclusions:** Bifrontal and unilateral ultra-brief pulse ECT are effective treatment techniques that do not cause measurable cognitive side-effects or cognitive complaints.

### P0323

Electroconvulsive therapy in a state psychiatric hospital in Singapore: Rates of use, indications, and outcome

L. Tan<sup>1</sup>, K. Sim<sup>1</sup>, A. Su<sup>2</sup>. <sup>1</sup>Department of General Psychiatry, Institute of Mental Health, Singapore, Singapore <sup>2</sup>Department of

Emergency Psychiatry, Institute of Mental Health, Singapore, Singapore

**Background:** Electroconvulsive therapy (ECT) involves the administration of a variable frequency electrical stimulus shock via electrodes applied to the scalp to induce a seizure for therapeutic purposes. In 2001, the American Psychiatric Association (APA) task force on ECT concluded that convincing data exists to support use for major depression, bipolar depression and mania, schizophrenia, and schizoaffective and schizophreniform disorders. However, the National Institute for Clinical Excellence in the UK (NICE 2003) does not recommend that ECT be used as a long-term treatment to prevent recurrence of depressive illness, and that it recommends that ECT should not be used in the general management of schizophrenia.

**Aims:** To review and describe the practice of ECT in the largest psychiatric hospital in Singapore.

**Methodology:** This was a retrospective descriptive study performed on all patients who were administered electroconvulsive therapy at the Institute of Mental Health in Singapore during the 2-year study period of 1st July 2005 – 30th June 2007. Data was collected from existing medical records on the demographics, indications, frequency and the complications of the patients given ECT. The frequency of missed fits was also determined as measuring the number of missed-fits provided one way of assessing an ECT clinic's efficiency.

**Results:** The main indications for electroconvulsive therapy at the Institute of Mental Health in Singapore were patients with Schizophrenia or Schizoaffective Disorders with poor response to medications, followed by patients with mood disorders. The rate of complications of ECT and the frequency of missed-fits were found to be low.

### P0324

Differences in brain electrical activity after the cerebellar hemisphere and the vermis rTMS

B. Tislerova<sup>1,2,3</sup>, M. Kopecek<sup>1,2,3</sup>, P. Sos<sup>1,2,3</sup>, J. Audrlicky<sup>2</sup>, M. Brunovsky<sup>1,2,3</sup>, J. Horacek<sup>1,2,3</sup>. <sup>1</sup>Prague Psychiatric Center, Prague, Czech Republic <sup>2</sup>Charles University 3rd Faculty of Medicine, Prague, Czech Republic <sup>3</sup>Center of Neuropsychiatric Studies in Prague, Prague, Czech Republic

**Background:** The previous studies have detected changes of brain electrical activity after the cerebellar hemisphere rTMS and the vermis rTMS. We supposed that right cerebellar 1Hz rTMS evokes changes in the left frontal cortex. The aim of our study was to determine if 1Hz cerebellar hemisphere and 1 Hz vermis rTMS induces different effect in frontal electrical activity.

**Methods:** We used 10 minutes of 1 Hz rTMS (with 600 impulses) in two sessions (first session- application over the right cerebellar hemisphere, second over the vermis). 31-channel EEG was recorded in 5 right-handed healthy volunteers before and after rTMS. The 3D distribution of the current density was revealed by a method of qEEG-Low Resolution Brain Electromagnetic Tomography (LORETA, Pascual-Marqui et al. 1994; 1999).

**Results:** After 1 Hz right cerebellar hemisphere rTMS the current density decreased in the alfa2, beta1, beta2 and beta3 band over the frontal cortex including medial frontal cortex and the anterior cingulate ( $p < 0.01$ ). After 1 Hz vermis rTMS we found no significant changes.

**Conclusions:** Our results suggest the possibility to influence the frontal cortical activity by means of the cerebellar hemisphere