delta activity were observed in the EEG, therefore it was found suspicious for NCSE, and the patient was planned to perform an EEG again by administering diazepam to confirm the diagnosis. After diazepam, the patient whose EEG tracing was clearly improved was admitted to the neurology intensive care unit. He was followed up for 48 hours with continuous 4 mg/hour/day midazolam and continuous bedside EEG in the neurology intensive care unit. Concomitant lamotrigine was started at 100 mg/day. Significant improvement in EEG, sinusoidal alpha, and beta waves with the eye open was observed at the 48th hour, and the patient was transferred back to the psychiatry service. Lamotrigine treatment was increased up to 200 mg/day and clozapine treatment was adjusted to 350 mg/day in the psychiatry service. In the patient whose EEG was requested again before discharge.

Results: The diagnosis of NCSE post-ECT can be laborious; the symptoms may not be characteristic and clear, and usually not distinguish from symptoms of confusion, delirium, or psychiatric illness, hence the follow-up psychiatrist should be careful. In suspicious cases, EEG should be taken, especially in patients at risk for seizures. These risky conditions include previous seizure history, and lithium or clozapine use.

Conclusions: The diagnosis of NCSE after ECT is a demanding condition. Particular attention should be paid to factors that will lower the seizure threshold. In cases with ECT treatment with clozapine, intermittent clozapine blood levels can be quantified and medication interactions and smoking can be considered. When the cases are examined, the common aspect of most of them is that the treatments have good results.

Disclosure of Interest: None Declared

EPP0246

DTMS Combined with a Pain-directed Psychotherapeutic Intervention in Fibromyalgia - A Randomized Double-blind Sham-controlled Study

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Introduction: Fibromyalgia Syndrome (FMS) is a highly prevalent condition, causing chronic pain and severe reduction in quality of life and productivity, as well as social isolation (Birtane *et al.* Clinical Rheumatology 2007; 26(5), pp. 679–684; Arnold *et al.* Psychosomatics. England 2010; 51(6), pp. 489–497; Lacasse, Bourgault and Choinière. BMC Musculoskeletal Disorders 2016; 17(1), pp. 1–9). Despite significant morbidity and economic burden caused by FMS, current treatments are scarce (Busch *et al.* The Journal of rheumatology. Canada 2008; 35(6), pp. 1130–1144; Bernardy *et al.* Journal of Rheumatology 2010; 37(10), pp. 1991–2005; Jackson *et al.* American journal of hematology 2016; 91(5), pp. 476–80).

Objectives: To examine whether stimulation of the dorsal Anterior-Cingulate-Cortex and the medial Prefrontal-Cortex (ACC-mPFC) activity by deep Transcranial Magnetic Stimulation (dTMS) enhances a pain-directed psychotherapeutic intervention.

Methods: Nineteen FMS patients were randomized to either 20 sessions of dTMS or sham stimulation, each followed by a pain-directed psychotherapeutic intervention. Using H7 HAC-coil or sham stimulation, we targeted the ACC-mPFC; specific brain areas that have a central role in pain processing (Fomberstein, Qadri and Ramani. Current Opinion in Anaesthesiology 2013; 26(5), pp. 588–593; Tendler, A. *et al.* Expert Review of Medical Devices 2016; 13(10), pp. 987–1000). Clinical response to treatment was evaluated using the McGill Pain Questionnaire (MPQ), Visual Analogue Fibromyalgia Impact Questionnaire (VAS-FIQ), Brief Pain Inventory questionnaire (BPI), and the Hamilton Depression Rating Scale (HDRS).

Results: DTMS treatment was safe and well tolerated by FMS patients. A significant decrease in the sensory and affective pain dimensions was demonstrated specifically in the dTMS cohort, as measured by the MPQ using paired-sample t-tests with Bonferroni correction for multiple comparisons on three-time points (Significant group x time interaction [$F(2, 34) = 3.79$, $p < .05$, $\eta^2 = 0.183$]. No significant changes were found in the cognitive functions, psychophysical measurements of pain, or depressive symptoms in both dTMS and sham groups and between groups.

Conclusions: Our findings suggest that a course of dTMS combined with a pain-directed psychotherapeutic intervention can alleviate pain symptoms in FMS patients. Beyond the clinical possibilities, future studies are needed to substantiate the innovative hypothesis that it is not the dTMS alone, but rather dTMS driven plasticity of pain-related networks, that enables the efficacy of pain-directed psychotherapeutic interventions.

Disclosure of Interest: None Declared

EPP0247

Adjunctive short- and long-term combination treatment of esketamine and VNS in difficult to treat depression (DTD)

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Introduction: NMDA-Receptor antagonists have rapid antidepressant and antisuicidal properties. However, the antidepressant effect is short lasting raising the question of best maintenance strategy, which is unanswered so far. Invasive vagus nerve stimulation (VNS) as a treatment option for refractory and chronic major depression was shown to reduce the need of maintenance treatment sessions in electroconvulsive therapy (ECT) patients.

Objectives: There are no published data on the combination of VNS and esketamine. To determine the impact of the combination of VNS and esketamine in DTD.

Methods: In this naturalistic observational study, we investigated the short- and long-term impact of combination of VNS and esketamine in n=8 patients with difficult-to-treat depression (DTD). Follow-up evaluations were scheduled prospectively pre-surgery at baseline and every 3 months after VNS-implantation (follow-up period 12-24 months, mean 17).

Results: The mean age of patients was 50,8 years. 50 % of patients (n=4) were female. All patients suffered from severe DTD (mean MADRS at baseline 30,9). Mean number of hospitalizations per

months decreased from 0.17 to 0.11 after VNS implantation. 6 of 8 patients were offered maintenance esketamine treatment. Mean MADRS at 12-months was 19 (38.5 % MADRS reduction). The need of mean esketamine treatment sessions decreased from 2.3 at 6-months visit (V6) to 1.37 at V9 and 0.96 at V12 respectively. Termination of maintenance esketamine was possible in 4 cases after a mean of 11.5 months.
Conclusions: Combination of esketamine and VNS is a safe and effective treatment option in severely ill DTD patients to relieve disease severity and reduce hospitalizations. Need of esketamine treatment sessions decreases 6 months after VNS implantation.

Disclosure of Interest: None Declared

EPP0248

Effect of repetitive transcranial magnetic stimulation on chronobiological hypothalamic-pituitary-thyroid axis activity in major depression

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Introduction: We previously demonstrated that the difference between 11 PM and 8 AM TSH response to protirelin (TRH) tests on the same day (ΔΔTSH test) is an improved measure in detecting hypothalamic-pituitary-thyroid (HPT) axis dysregulation in depression. This chronobiological index is normalized after successful antidepressant treatment.
Objectives: The present study aimed at assessing the effects of repetitive transcranial magnetic stimulation (rTMS) of the left dorsolateral prefrontal cortex (DLPFC) on the HPT axis activity in treatment resistant depressed inpatients (TRDs) (defined as having at least 2 treatment failures).
Methods: The ΔΔTSH test was performed in 13 TRDs and 14 healthy hospitalized control subjects (HCs). To be enrolled in this study, patients had to show reduced ΔΔTSH values (i.e., < 2.5 mU/L) at baseline (BL). After 20 sessions of rTMS (using daily theta-burst stimulation; 100% resting motor threshold; number of pulses/session: 900), the ΔΔTSH test was repeated in all inpatients. *The* 17-item Hamilton depression rating scale *(HAM-D) was used to assess the severity of depression*. Remission was defined by a final HAM-D score ≤ 8.
Results: Compared to BL, HAM-D scores decreased and ΔΔ TSH values increased after 20 sessions of rTMS (both $p < 0.05$ by T-test). There was a relationship between the reduction in HAM-D scores from BL to endpoint and the increase in ΔΔTSH values (rho = -0.64; n = 13; p = 0.018). At endpoint, 7 patients showed ΔΔTSH normalization (among them 6 were remitters), while 6 patients did not normalize their ΔΔTSH (all were non-remitters) ($p < 0.005$ by Fisher Exact test).
Conclusions: Our results suggest that after 20 sessions of rTMS, chronobiological restoration of the HPT axis activity is associated with clinical remission. Further investigation of the specific effects of rTMS on the HPT axis activity in TRDs is warranted.

Disclosure of Interest: None Declared

EPP0249

Non-invasive brain stimulation and cognitive function in patients with major depressive disorder or bipolar depression: systematic review and meta-analysis

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Introduction: Non-invasive brain stimulation protocols are effective treatments for depressive episodes. Although the cognitive adverse effects of electroconvulsive therapy (ECT) are well documented, evidence regarding the cognitive effects of repetitive transcranial magnetic stimulation (rTMS) and transcranial direct current stimulation (tDCS) is mixed.
Objectives: The aim of this study was to synthesize research on the cognitive effects of non-invasive brain stimulation protocols and to differentiate between studies of major depressive disorder (MDD), bipolar depression and mixed populations.
Methods: Following a systematic literature search of multiple electronic databases, a series of meta-analyses were conducted to estimate standardized mean differences (SMD) between pre- and post-treatment cognitive functioning across nine cognitive domains. Where possible, SMDs were estimated separately for MDD, bipolar depression and mixed populations. In studies that included both patients with MDD and bipolar depression, the percentage of patients with a diagnosis of bipolar depression was tested as a potential moderator.
Results: More than 150 treatment arms were included in the analyses. For ECT, we observed a small decline in language functioning and a decrease in autobiographical memory scores. There was no evidence of pre-post differences across other cognitive domains. For rTMS and tDCS, small to moderate cognitive improvements were observed for several cognitive domains, for example for executive functioning. Across most analyses, between-study heterogeneity was high and could not be accounted for by differences between MDD, bipolar depression or mixed populations.
Conclusions: There was limited evidence that differentiation between studies of MDD, bipolar depression and mixed populations accounted for between-study heterogeneity in analyses of pre-post differences in cognitive functioning. Given that most studies included both patients with MDD and bipolar depression, this finding should be treated as preliminary. Across all the treatment protocols examined, more data are needed to investigate the cognitive effects of non-invasive brain stimulation in patients with bipolar depression.

Disclosure of Interest: None Declared

EPP0250

Knowledge and Attitudes about Transcranial Magnetic Stimulation among Psychiatrists in Oman: A cross sectional study

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Introduction: Background and Objective: Repetitive transcranial magnetic stimulation (rTMS) is a noninvasive treatment method