Introduction: Use of combined antidepressive treatment included high-frequency rhythmic transcranial magnetic stimulation (rTMS) of the left dorsolateral prefrontal cortex (DLPFC) is one of the ways for overcoming of pharmaco-resistance in depressive patients.
Objectives: The aim of the study was the search for possible EEG predictors of antidepressive effects of rTMS of the left DLPFC in combined treatment of depression.
Methods: 30 female in-patients (F31.3, F33.0, F33.1, by ICD-10; 20-50 years, mean age 36.9±10.3) with pharmaco-resistant depression were enrolled in the study. Treatment included antidepressants (mainly SSRI) and a 3-week course of rTMS (20 Hz) of the left DLPFC. Correlations between pre-treatment EEG spectral power values, and post-treatment quantitative clinical assessments of patients were analyzed. Responders/non-responders were determined by standard criteria of 50% decrease in HDRS-17 scale total scores after treatment course.
Results: Responders (23 out of 30) revealed significant ($p<0.05$) negative correlations between post-treatment HDRS-17 scores and pre-treatment EEG spectral power in theta-2 (6-8 Hz) and alpha-1 (8-9 Hz) frequency sub-bands in the parietal-occipital-posterior temporal leads. Non-responders (7 out of 30) showed negative correlations between the post-treatment HDRS-17 scores and pre-treatment theta-2 EEG spectral power in the frontal-central-temporal regions of the right hemisphere.
Conclusions: Even brief course of rTMS of the left DLPFC enhances the action of antidepressants, and allows overcoming partially the pharmaco-resistance in depressive patients. Baseline values of theta-2 and alpha-1 EEG spectral power may serve as possible predictors of the effects of combined antidepressive therapy including rTMS. The study supported by RBRF grant No.18-01-00029a.

Disclosure: No significant relationships.
Keywords: transcranial magnetic stimulation; baseline EEG; prediction of treatment effects; pharmaco-resistant depression

O102

Individual dynamics of daily life functioning of reward system can predict future level of depressive symptoms

A. Kuranova[1]*, A. Martinez[2], M. Wichers[1], J. Wigman[1] and S. Booij[1]

[1]Department Of Psychiatry, Interdisciplinary Center Psychopathology And Emotion Regulation (icpe), University of Groningen, University Medical Center Groningen, Groningen, Netherlands and [2]Faculty Of Psychology And Neuroscience, Maastricht University, Maastricht, Netherlands

*Corresponding author.
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Introduction: The reward system regulates the processes that motivate people to pursue evolutionary beneficial stimuli. Effective functioning of the reward system can protect against the development of anhedonia. In the daily life, the reward system can be expressed as the dynamic interplay of positive affect (liking), reward anticipation (wanting), and active behavior (engaging). Applying network analysis to daily life experience data allows us to identify such reward dynamics and use them to predict future depressive symptoms.
Objectives: We investigated whether at baseline (i) higher network positive affect in-strength, reflecting how strongly positive affect is influenced by other components and hence the level of anhedonia, and (ii) higher network connectivity, reflecting overall functioning of the reward system, are associated with fewer depressive symptoms on follow-up.
Methods: We used data from 43 participants with mild depressive symptoms from the SMARTSCAN study. The dynamic interplay between momentary positive affect, reward anticipation, and active behavior was assessed with individual vector-autoregressive models and the network analysis. Network positive affect in-strength and connectivity indices were used to predict a six-month depressive symptoms trajectory.
Results: Reward systems networks vary greatly between individuals. On the group level, higher positive affect in-strength (Beta=-3.66, p=0.05) and network connectivity (Beta=-4.06, p=0.03) at baseline were associated with fewer symptoms at follow-up.
Conclusions: Higher influences of reward anticipation and active behavior on positive affect and stronger connections between reward cycle components are associated with fewer future symptoms, suggesting the importance of daily life reward cycle dynamics in depression.

Disclosure: No significant relationships.
Keywords: reward system; reward dynamics; Depression; Network analysis

O104

Potential of antithrombin III as a biomarker of antidepressive effect in major depressive disorder

R. Song* and Y. Shi

Department Of Neurology, Affiliated ZhongDa Hospital, School of Medicine, Southeast University, Nanjing, China

*Corresponding author.
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Introduction: Previous study has identified increased antithrombin III (ATIII) in patients with major depressive disorder (MDD), supporting ATIII as a potential biomarker for depression diagnosis.
Objectives: This study aimed to reveal the alteration of ATIII after occipital repetitive transcranial magnetic stimulation (rTMS), and illuminate its power to evaluate and predict the curative effects in MDD treatment.
Methods: A total of 90 MDD patients were recruited and further intervened with rTMS in occipital for individualized, standard or sham treatment for five days. Those of 74 patients underwent entire detection, including clinical assessments, blood collection and protein measurement.
Results: After treatment, decreased ATIII were detected in both the individualized and the standard group (p=0.000 and 0.001, respectively) instead of the sham one. Especially, the reduction in ATIII in the individualized group was associated with improvements in several neuropsychological assessments. Besides, ATIII at baseline in the standard group and after the individualized rTMS showed high performance to evaluate or predict the response to the 5-day treatment (AUC=0.771, 95%CI, 0.571-0.971; AUC=0.875, 95%CI, 0.714-1.000, respectively) and the remission in follow-up (AUC=0.736, 95%CI, 0.529-0.943; AUC=0.828, 95%CI, 0.656-1.000, respectively). Furthermore, both baseline ATIII and change

in ATIII involved in the prediction of 24-item Hamilton Depression Rating Scale in the follow-up study with significant predictive values (p=0.0240 and 0.0233, respectively).
Conclusions: This study detected a reduction in ATIII after occipital rTMS, further revealed the relationships between change in ATIII and therapeutic response, and ultimately provided evidence for the potential of ATIII as a biomarker for the evaluation and prediction of antidepressive effect.

Disclosure: No significant relationships.
Keywords: major depressive disorder; antithrombin III; occipital repetitive transcranial magnetic stimulation antidepressive effect; biomarker

O106

Use of pharmacotherapies for treatment resistant depression in finland: A nationwide cohort study

H. Taipale[1]*, M. Lähteenvuo[1], A. Tanskanen[2], S. Rannanpää[3] and J. Tiihonen[2]

[1]Forensic Psychiatry, Niuvanniemi Hospital, Kuopio, Finland; [2]Department Of Clinical Neuroscience, Karolinska Institutet, Stockholm, Sweden and [3]Janssen-cilag, Janssen-Cilag, Espoo, Finland
*Corresponding author.
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Introduction: There is a lack of knowledge on utilized pharmacotherapies for treatment resistant depression (TRD).
Objectives: To investigate the courses of treatment of TRD.
Methods: All patients aged 16-65 years and diagnosed with depression in Finland during 2004-2016 were included (identified from nationwide registers for inpatient and specialized outpatient care, sick leaves and disability pensions). New antidepressant users were identified with six-month washout period and followed up for two years to observe the possible emergence of TRD, which was defined as initiation of a third treatment after having two failed pharmacological treatments with adequate duration. Pharmacological treatments were analyzed using PRE2DUP-method.
Results: During follow-up, 177,144 persons had their first registered depression (mean age:39.5, 62.5% women). Of them, 10.9% (N=19,322) met TRD criteria. Among the TRD patients, most common first and second lines antidepressants were as follows: SSRIs (44.6%), mirtazapine (19.0%) and SNRIs (16.5%). As the third line of treatment, 44.2% of TRD patients had antidepressant monotherapy, 32.1% a combination of ≥2 antidepressants, 15.8% antipsychotic or mood stabilizer augmentation and an antidepressant, 4.9% both combination of antidepressants and an augmentation with a mood stabilizer or antipsychotic, 2.7% antipsychotic or mood stabilizer monotherapy and 0.3% ECT monotherapy. Of TRD patients, 36.2% (N=6985) progressed to the fourth line of treatment and most common treatments were antidepressant monotherapy (37.5%), antidepressant combinations (30.8%) and augmentation (20.3%).
Conclusions: Although antidepressant combination and augmentation strategies became more frequent, antidepressant monotherapies were still the most common third and fourth lines of depression treatment.

Disclosure: The study was funded by Janssen and SR is an employee of Janssen.
Keywords: Treatment Resistant Depression; pharmacotherapy

O108

Identification of risk-factors for the development of depressive symptoms in perinatal period: A longitudinal study

A. Vece[1]*, G. Tarantino[1], M. Carfagno[1], M. Raia[1], C. Ciampi[1], M. Di Vincenzo[1], A. Pitocco[1], G. Sampogna[1], M. Luciano[1], M. Torella[2] and A. Fiorillo[1]

[1]Psychiatry, University of Campania "Luigi Vanvitelli", napoli, Italy and [2]Ginecology And Obstetrics, University of Campania "Luigi Vanvitelli", napoli, Italy
*Corresponding author.
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Introduction: Perinatal depression is a severe and disabling condition, which affects negatively both mothers' and children's mental health and well-being. About 12.8% of pregnant women report depressive symptoms in the perinatal period.
Objectives: The aims of the present study are to: 1) identify factors (socio-demographic and clinical) associated with an increased risk of developing PD; 2) promote a screening program on PD.
Methods: All pregnant women were assessed at each trimester of pregnancy, three days after the childbirth and after 1, 3, 6 and 12 months, with the Edinburgh Postpartum Depression Scale (EPDS). Women scoring ≥10 on the EPDS were invited to receive a full psychiatric evaluation to confirm the diagnosis.
Results: 420 women were recruited. 52.9%, 27.6% and 31.6% of participants presented an EPDS≥ 10 score at The I, II and III trimester of pregnancy, respectively. The percentage of patients with and EPS score ≥19 is 16.6%, 6.8%, 6.8%, 11.3% and 7.8% in 3 days following the childbirth and after 3, 6, 9 and 12 months, respectively. Higher EPDS scores are predicted by the presence of anxiety symptoms before pregnancy and of depressive and anxiety symptoms in previous pregnancies ($p<0.05$). Women with family conflicts and with anxiety symptoms in the partner are more likely to report higher EPDS scores ($p<0.001$).
Conclusions: Our results confirm that perinatal depression is a highly prevalent condition. An early identification of depressive symptoms during this period is crucial in order to reduce the long-term negative impact on the mothers, the newborn and other family members.

Disclosure: No significant relationships.
Keywords: Perinatal depression; depressive symptoms; risk-factors; longitudinal study

O109

A specific "at risk" profile related to recent stressful life events in euthymic major depressive disorder

G. Serafini[1]*, X. Gonda[2], A. Aguglia[1], A. Amerio[1], G. Canepa[1], P. Geoffroy[3], M. Pompili[4] and M. Amore[5]

[1]Department Of Neuroscience, Rehabilitation, Ophthalmology, Genetics, Maternal And Child Health (dinogmi), University of Genoa, IRCCS Ospedale Policlinico San Martino, Genoa, Italy, Genoa, Italy; [2]Department Of Psychiatry And Psychotherapy, Semmelweis University, Budapest, Hungary; [3]Psychiatry And Addiction Medicine Department, Hôpital Bichat Claude-Bernard, Assistance Publique - Hôpitaux de Paris, Paris, France; [4]Departement Of Neurosciences,