EPP0167

Deep learning approach to evaluate sex differences in response to neuromodulation in Major Depressive Disorder

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Introduction: Identifying the factors that mediate treatment response to rTMS in MDD patients can guide clinicians to administer more appropriate, reliable, and personalized interventions.
Objectives: The present study aimed to investigate sex differences in response to repetitive transcranial magnetic stimulation (rTMS) in Major Depressive Disorder (MDD) patients.
Methods: In this paper, we developed a novel pipeline based on convolutional LSTM-based deep learning (DL) to classify 25 female and 25 male subjects based on their rTMS treatment response.
Results: Five different classification models were generated, namely pre/post-rTMS female (model 1), pre/post-rTMS male (model 2), pre-rTMS female responder vs. pre-rTMS female non-responders (model 3), pre-rTMS male responder vs. pre-rTMS male non-responder (model 4), and pre-rTMS responder vs. non-responder of both sexes (model 5), achieving 93.3%, 98%, 95.2%, 99.2%, and 96.6% overall test accuracy, respectively.
Conclusions: These results indicate the potential of our approach to be used as a response predictor especially regarding sex-specific antidepressant effects of rTMS in MDD patients.

Disclosure: No significant relationships.
Keywords: EEG; rTMS; deep learning; sex differences

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EEG Markers of Suicidal Ideation in Depressive Female Adolescents

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Introduction: Timely detection of suicidal thoughts is one of the ways to prevent suicide. Use the psychiatric interview only for this purpose in adolescents is often insufficient due to poor compliance. Thus, the search for objective neurophysiological markers of suicidal ideation in adolescents seems to be actual.
Objectives: The aim of the study was to reveal the relationships between pre-treatment EEG parameters and intensity of suicidal ideation in depressive female adolescents.
Methods: 72 female depressive patients (all right-handed, age 16–25, mean 18,2±2.6 years old) were enrolled in the study. Pre-treatment total HDRS-17 scores varied from 13 to 43 (mean 26,9±7.5). Multichannel eyes closed EEG was recorded, and absolute spectral power was calculated in 8 narrow frequency sub-bands. All patients answered the inventory on intensity of suicidal thoughts. Spearman's correlations between pre-treatment EEG parameters and suicidal ideation scores were analyzed.
Results: Scores of intensity of suicidal ideation correlated positively ($p<0.05\div0.01$) with values of EEG alpha2 (9-11 Hz) spectral power in F7, F8, F4, C3, C4, T4, P4 and O2 EEG leads, as well as with values of EEG delta (2-4 Hz) spectral power in F7, F3 and C3 EEG leads ($p<0.05$).
Conclusions: The intensity of suicidal ideation in depressive female adolescents associates with wide propagation of EEG alpha2, especially over the right hemisphere, and with EEG signs of decreased functional state of anterior regions of the left hemisphere. The study supported by RBRF grant No.20-013-00129a.

Disclosure: No significant relationships.
Keywords: female adolescents; suicidal ideation scores; quantitative EEG

EPP0169

An 8-year longitudinal study of long-acting injectable (LAI) antipsychotics. Prescription trends and therapeutic drug monitoring to inform precision dosing

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Introduction: Despite the widespread use of long-acting injectable (LAI) antipsychotics in schizophrenia and other disorders, there is a lack of longitudinal studies evaluating prescription trends and the usefulness of therapeutic drug monitoring (TDM) to inform dosing. Indeed, LAI prescription varies greatly among different areas of the world and over the years.
Objectives: Assess trends in LAI prescription in 2013-2020 at the Psychiatry Department of Bozen, Italy, and (2) analyze the correlation between dose of prescribed LAIs and blood levels measured via TDM.
Methods: Parametric statistics.
Results: LAIs were administered to 471 patients ($\bar{x}$ age±SD=47.2±16.3 years; 56.3% men). The pie chart shows LAI treatment duration, i.e., from 1 to 7 consecutive years. The most used LAIs were haloperidol in 2013-2104 (26.5-31.8%) and paliperidone in 2015-2020 (22.5-25.7%). Dose adjustments were rather frequent, whereas the switch between LAI, due to moderate-to-side effects or unsatisfactory improvement of clinical status, was infrequent (41 cases/8 years). LAI interruption for the same reasons or non-compliance was even more infrequent (10 cases), but in 8 cases it happened for opposite reasons, i.e., achievement of patients' stabilization and good compliance. The Table shows doses and plasma levels of LAIs. Correlations between doses and plasma levels