Methods: A review of the literature was performed, including technical and pharmacologic methods tested to date to alleviate the cognitive side effects of ECT. Technical changes included electrode placement and stimulus waveform. Pharmacological methods included NMDA-receptor antagonists, cyclooxygenase inhibitors, calcium channel blockers, cholinesterase inhibitors, glucocorticoid receptor antagonists, thyroid hormones, opioid antagonists, nitric oxide donors, and nootropic agents.

Results: Approaches to reduce ECT-related cognitive side effects have been inconsistent. Neuroinflammation, involved in the pathophysiology of numerous neuropsychiatric conditions, may also contribute via immune mechanisms. Microglia in a neurotoxic state produce pro-inflammatory mediators (IL-1β, TNF-α, IL-6), whereas the neuroprotective phenotype release anti-inflammatory cytokines (IL-10). The microbiome may also play a role via immune signaling mechanisms. Interestingly, a case report has shown changes in gut microbiome bacterial populations during a course of ECT.

Conclusions: Given that ECT induces seizures, the finding that the adverse effects of epileptic seizures may be caused by neuroinflammation mediated by pro-inflammatory glial cells may be applicable to the treatment of MDD. This connection suggests the possibility of the microbiome affecting inflammatory pathways related to the cognitive side effects of ECT. Nonetheless, further work is needed to evaluate the neurobiological underpinnings of ECT-induced cognitive side effects as facilitated by neuroinflammatory pathways and changes in the microbiome.

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Keywords: Electroconvulsive Therapy (ECT), Microbiome-Gut-Brain Axis, Major Depressive Disorder (MDD), Neuro-inflammation

The Mini Suicide Risk Stratification is an Improvement over Rating Scales Suicide Items

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Background: There are several instruments to evaluate the suicide risk of a particular patient. Following is the suicide risk data in three different instruments administered simultaneously to outpatients who presented for treatment of a mood disorder.

Methods: MINI, PHQ9 and QIDS scores on suicide items of 772 consecutive mood disorder outpatients were reviewed. Data included demographics, history of previous suicide attempts and hospitalization.

Results: In order of increasing risk on the MINI from No Suicide Risk (N=243), to Low (N=370), then Moderate (N=57) then High Suicide Risk (N=102). 49% of the No risk group were bipolar followed by 40%, 42% and 45% of the high-risk group. History of psychiatric hospitalization was reported in 11% of the No risk group then 21%, 19% and 37% of the High-risk group. History of suicide attempt was present in none of the No risk group followed by 15%, 22% and 47%. The mean QIDS SR16 score was 8.7 for the No risk group with 0.06 on the suicide question followed by 13.1 and 0.38, then 15.9 and 1 then 16 and 1.4. The mean PHQ9 total score was 9.4 in the No risk group with 0.05 on the suicide item followed by 13.9 and 0.37, 16.2 and 1.1 then 16 and the 1.4.

Conclusions: The MINI's stratification of suicide risk correlates well with history of suicide attempts, hospitalization and severity of depression. It enhances risk assessment over the general suicide item questions in the QIDS SR16 and PHQ9.

Keywords: Suicide Risk, Mood Disorder, Rating Scales

The Potential of Ecological Momentary Assessments in the Prediction of Suicidal Ideation: A Feasibility Study

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Background: More than 800 000 people commit suicide every year. This calls for better predictors and prevention. Yet, the temporal dynamics of suicidal ideation make this challenging. A solution might be ecological momentary assessments (EMA). The real-time, real-world data collection might capture the temporal dynamics and help identify predictors. We tested the feasibility of EMA in a high-risk population and examined the predictive value of sleep quality, a promising predictor and modifiable risk factor.

Methods: We included patients across diagnoses with suicidal ideations from the University Hospital of Psychiatry Zurich, Switzerland. Patients used an in-house developed app with 5-times daily EMA for 28 days during the most critical period for suicides: hospital discharge. EMA data was analyzed with a random intercept, random slope model.

Results: We included 15 patients (females: n=12, age: M=31.20±12.71 years) who were clinically depressed (Beck Depression Inventory: M=30.63±14.19) and reported suicidal ideations (107 of 455 EMA in the first week, 23.5%). Of the 455 EMA in the first week, more than half were completed (n=230, 50.5%). We found no evidence that sleep quality predicted suicidal ideation (β=-0.25; 95%CI,-0.59, 0.04; P = 0.12).

Conclusions: We showed that EMA allow to assess suicidal ideations, even in a high-risk population, and to capture its temporal dynamics which is important for an adequate estimation of suicidal ideations to identify reliable predictors and ultimately develop effective treatments. Sleep quality was not a predictor for suicidal ideation, which might be due to the limited sample size and requires further investigation in a larger sample.

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Keywords: Suicidal Ideation, Sleep, Ecological Momentary Assessment