Methods: A systematic search for published clinical trials and cohort studies was conducted on August 13, 2024, using keywords including ECT, VEGF, MDE, and mood disorders, with no language or publication date restrictions. We selected studies enrolling patients in a current MDE related to MDD or BD, excluding those focused on manic episodes. A fixed-effects or random-effects model was applied. Subgroup analyses were performed to investigate the data further.
Results: Seven studies involving 621 participants (61.9% female; mean age: 50.2 years) were preselected. Six studies measured plasma VEGF levels; one assessed cerebrospinal fluid (CSF) levels. Plasma VEGF levels did not differ significantly between healthy controls and MDE patients, either before (SMD = 0.02 [−0.17; 0.21], p = 0.84, I^2 = 0%) or after ECT (SMD = 0.11 [−0.21; 0.44], p = 0.50, I^2 = 0%). Of the five studies reporting post-ECT VEGF levels, three found a significant increase from baseline. A significant correlation was observed between baseline plasma VEGF levels and depression response to ECT (r = 0.34, Z = 4.92, p < 0.0001, I^2 = 0%). Of the five studies examining increased VEGF levels after ECT and symptom reduction, only one found a significant association. A sensitivity analysis indicated substantial heterogeneity when including the CSF study.
Conclusions: Plasma VEGF levels were not significantly different in MDE patients compared to healthy controls, either before or after ECT. Baseline plasma VEGF levels positively correlated with ECT treatment response, suggesting they may provide neurotrophic support and predict outcomes. Despite robust findings and minimal heterogeneity, this analysis was limited by the low number of studies and small sample sizes. Further research is needed to explore the association between MDEs and VEGF, especially in the CSF, and to clarify the role of baseline VEGF in ECT treatment response.

Disclosure of Interest: I. Borja De Oliveira: None Declared, G. A. M. Alves: None Declared, D. Soler Lopes: None Declared, A. de Vasconcelos: None Declared, A. Stephany: None Declared, F. Reis Soares: None Declared, M. Kraide Piedade de Abreu: None Declared, M. Carbajal Tamez: None Declared, J. Quevedo Shareolder of: Instituto de Neurociencias Dr. Joao Quevedo, Grant / Research support from: LivaNova; and receives copyrights from Artmed Editora, Artmed Panamericana, and Elsevier/Academic Press, Consultant of: EMS, Libbs, and Eurofarma, Speakers bureau of: Myriad Neuroscience and AbbVie., M. Teranishi: None Declared

O097

Response to Ketamine Therapy in Anxious and Non-Anxious Major Depressive Disorder: A Meta-Analysis of Clinical Trials

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doi: 10.1192/j.eurpsy.2025.350

Introduction: Anxious depression (AxD) as an independent diagnostic has been controversial, with many suggesting it as a transient state and others highlighting evidence of a worse outcome, severity, and increased suicide risk. The International Classification of Diseases (ICD-11) lists a related concept under 6A73, Mixed depressive and anxiety disorder. Previous literature on ketamine's efficacy has mainly focused on either anxiety or depression, with limited comparison of both groups. Given their high comorbidity and shared pathophysiology, we aimed to assess ketamine's efficacy in these populations.
Objectives: This meta-analysis aimed to consolidate evidence from clinical trials evaluating ketamine therapy in AxD and Non-Anxious Depression (NAxD).
Methods: A search for published clinical trials in indexed journals and databases was conducted on August 11, 2024. Keywords included ketamine, anxiety, comorbidity, and depression, with no restrictions on language or publication date. Studies on bipolar or psychotic depression were excluded. A random-effects model accounted for variability, and subgroup analyses were performed.
Results: Eight studies involving 536 participants (mean age = 39.0 years) were preselected. Seven studies defined "anxious depression" as a score of 7 or higher on the HAMD-AS, with AxD mean of 8.74 (±0.56) and NAxD mean of 5.83 (±1.9). MADRS scores were 35.18 (±2.22) for AxD and 31.97 (±2.29) for NAxD. The effect size of improvement in depressive symptom severity (as assessed by the MADRS) was not significantly different between the groups either 13 days after treatment (SMD = -0.07[-0.69, 0.55], p = 0.82, I2 = 73%) or 26-28 days after treatment (SMD = -0.30[-0.64, 0.04], p = 0.09, I2 = 21%). The overall depression response also did not significantly differ between the groups (odds ratio = 0.84 [0.50, 1.41], p = 0.52, I^2 = 13%). Insufficient data were available for remission rates.
Conclusions: Ketamine shows comparable efficacy in reducing depressive symptoms and achieving response in both groups. The group classified as AxD parallels previous reports of increased severity when reviewing baseline scores MADRS and other available scores. Thus, ketamine should be considered a viable treatment for patients with AxD, as they may have lower response rates to traditional antidepressants. This analysis was limited by the small number of studies, small sample sizes, and moderate heterogeneity. Differences in baseline depressive symptom severity and varying definitions of MDD with anxiety also constrained our analysis. Given the severity of symptoms in this population, we recommend developing better classification instruments for AxD. Further research is needed to explore remission differences in AxD and refine treatment strategies.

Disclosure of Interest: I. Borja De Oliveira: None Declared, A. Stephany: None Declared, M. Geremias: None Declared,

D. Xavier: None Declared, F. Wagner: None Declared, A. Balduino de Souza: None Declared, M. O. Pozzolo Pedro: None Declared, D. Soler Lopes: None Declared, M. Carbajal Tamez: None Declared, J. Quevedo Shareolder of: Instituto de Neurociencias Dr. Joao Quevedo, Grant / Research support from: LivaNova; and receives copyrights from Artmed Editora, Artmed Panamericana, and Elsevier/Academic Press, Consultant of: EMS, Libbs, and Eurofarma, Speakers bureau of: Myriad Neuroscience and AbbVie., M. Teranishi: None Declared

O098

The 'time' in lifetime: age-stratification and its impact on immune-based depression treatment

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doi: 10.1192/j.eurpsy.2025.351

Introduction: Depression is increasingly linked to immunological processes. Therefore, immune-based therapies, e.g., celecoxib, are being tested as augmenting treatment strategies. Many physiological processes during life are also linked to immunological changes. We tested the hypothesis that age affects treatment efficacy in a randomized controlled sample treated with the anti-inflammatory agent Celecoxib.

Objectives: We test the combined role of age and an anti-inflammatory augmentation treatment for treatment response in depression. For a more in depth understanding we investigated the role of six methylation-based cell-types in these immunological processes in a second step.

Methods: 113 individuals with a diagnosis of major depressive disorder were included in our analyses (M_{age}=44, 56% women, M_{MADRS}= 27.7). All patients were treated with Vortioxetine and recruited stratified by high sensitive C-Reactive Protein (hsCRP; <= 3 vs. > 3 mg/L)> 3mg/L). Based on a randomized controlled design, augmentation with Celecoxib was administered to 55 patients. A second assessment was performed after 6 weeks of treatment ($M_{MADRS\ 6W}$= 20.2). Cell type compositions of neutrophils, monocytes, B-cells, CD4+ and CD8+ Lymphocytes, and natural killer cells (NK), were estimated based on epigenome-wide DNA methylation markers (Illumina Infinium MethylationEPIC 850k BeadChip) using the Houseman method. Analyses were performed with linear regression models with $MADRS_{6W}$ as outcome. Our hypothesis was tested in the full sample. The additional analyses were performed stratified by age. All models were corrected for sex, hsCRP, and depression severity at baseline.

Results: Our analysis showed a statistically significant interaction between age and treatment condition on depression outcome (p=0.040), with significant main effects for both variables in the model (intervention: p=0.045, age: p=0.022). Sex and hsCRP were no statistically significant contributors. The intersection was identified at 45.5 years. Younger individuals treated with celecoxib showed a more pronounced reduction in MADRS ($M_{reduction}$=-9.6), than older individuals treated with the same condition ($M_{reduction}$=-5.5). The stratified individuals younger than 45 years, showed that neutrophils were associated with better treatment outcome (p=0.028), whereas for individuals older than 45 years this was the case for B-cells and NK cells (p=0.011, and p<0.001, respectively).

Conclusions: Our results indicate that immunological profiles in depression and in relation to treatment may be age-dependent, which can have major consequences for treatment success with anti-inflammatory augmenting strategies. Replication in an independent sample is needed to confirm the role of age in immune-focused treatment strategies for depression.

Disclosure of Interest: None Declared

O099

A randomized controlled trial of supervised group exercise therapy in patients with clinical depressive and anxiety disorders: the challenge of patient compliance

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doi: 10.1192/j.eurpsy.2025.352

Introduction: Depression and anxiety are global mental health concerns and contribute significantly to the global burden of human disease. Although psychotherapies and antidepressant drugs are effective and commonly used treatments for depression and anxiety, some patients do not achieve full remission of their symptoms and there remains a risk of residual symptoms.

Objectives: To validate effect of supervised group exercise therapy in outpatient treatment of depressive and anxiety disorders.

Methods: A total of 126 individuals were screened for elevated depressive and anxiety symptoms. 86 participants aged between 18 and 65 years (Median=33 years; IQR 15; 62.8 % females) were randomly assigned to exercise group (EX, N=43) or relaxation group (REL, N=43). EX was planned to receive 36 sessions and REL 12 sessions during a 12-week intervention. Depressive