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Introduction: The variety and efficacy of biomarkers available that may be used objectively to diagnose Major Depressive Disorder (MDD) in adults are unclear. This systematic review aims to identify and evaluate the variety of objective markers used to diagnose MDD in adults.
Objectives: This systematic review aims to identify and evaluate the variety of objective markers used to diagnose MDD in adults.
Methods: The search strategy was applied via PubMed and PsycINFO over the past 10 years (2013-2023) to capture the latest available evidence supporting the use of biomarkers to diagnose MDD. Papers were excluded if they were published in a non-peer-reviewed journal and/or not published in English; featured non-primary study designs (e.g. systematic review, meta-analysis, literature review); included children or adolescents in the study population; featured participants without a clinical diagnosis of MDD; featured participants with a diagnosis of other forms of MDD such as treatment resistant depression, vascular depression, remitted depression. Data was reported through narrative synthesis.
Results: 42 studies were included in the review. Findings were synthesised based on the following measures: blood, neuroimaging/neurophysiology, urine, dermatological, auditory, vocal, cerebrospinal fluid and combinatory – and evaluated based on its sensitivity/specificity and area under the curve (AUC) values. The best predictors of blood (MYT1 gene), neuroimaging/neurophysiological (5-HT1A auto-receptor binding in the dorsal and median raphe), urinary (combined albumin, AMBP, HSPB, APOA1), cerebrospinal fluid-based (neuron specific enolase, microRNA) biomarkers were found to be closely linked to the pathophysiology of MDD.
Conclusions: A large variety of biomarkers were available to diagnose MDD, with the best performing biomarkers intrinsically related to the pathophysiology of MDD. Potential for future research lies in investigating the joint sensitivity of the best performing biomarkers identified via machine learning methods and establishing the causal effect between these biomarkers and MDD.

Disclosure of Interest: None Declared

EPP558

Intermittent white light at 60Hz, a novel non invasive brain stimulation (NIBS), modulates neuroplasticity and ameliorates depressive-like symptoms in animal models - preliminary preclinical and in human data

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Introduction: Non-invasive brain stimulation (NIBS) is emerging as a promising option for the treatment of psychiatric diseases, including major depressive disorder (MDD). In this context intermittent white light at a specified frequency holds high promise. We have previously shown that 60Hz stimulation in mice induces selective brain entrainment associated with microglia-mediated remodeling of the perineuronal nets (Venturino et al., Cell Reports 2021).
Objectives: Here, we extend our previous findings with 60Hz stimulation to assess behavioral effects in mice and EEG response in healthy volunteers.
Methods: For the preclinical data, we exposed C57Bl6/J mice to a battery of behavioral tests to assess anxiety level, learning capability, and response to various stress paradigms after 60Hz light (2h per day/5 days) compared to constant light. Weight change, water and food intake were recorded. For human studies, a cohort of 12 healthy volunteers (6M, 6F) was recruited; their EEG response was investigated with an 8-channel EEG setup following acute (same day), short (5 days), and intermediate (3 weeks) stimulation with 60Hz entrainment (n=6) or sham light (n=6).
Results: Preliminary data from the preclinical behavior studies indicate that 60Hz treatment improves the social interaction of socially defeated mice compared to sham light stimulation. Furthermore, the animals showed less anxiety-related behavior when exposed to the elevated plus maze. No differences were noticed in weight change, water and food intake following 60Hz stimulation.
In healthy volunteers, we observed robust and widespread entrainment at 60Hz after acute 60Hz stimulation; the entrainment spread beyond the visual cortex and reached the frontal cortex. The normalized power of the 60Hz component slightly declined over time but remained significant as compared to sham stimulation at three weeks, indicating sustained EEG response. The stimulation was very well tolerated overall, without major side effects.
Conclusions: 60Hz intermittent light induces strong and sustained neuronal response in mice and humans, is well tolerated, and ameliorates depressive-like symptoms in the social defeat model in mice. 60Hz might represent a novel NIBS for the treatment of psychiatric disorders, including MMD.

Disclosure of Interest: None Declared

EPP559

Effectiveness of Psychotherapy vs Antidepressants for Depression in Primary Care in India: A Randomized Pilot Trial

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Introduction: Depression is commonly treated with psychotherapy or antidepressants, but predicting which intervention will work best for a given patient remains a challenge. This pilot trial compared the feasibility, acceptability, and effectiveness of psychotherapy based on behavioral activation (Healthy Activity Program, HAP) and antidepressant medication (fluoxetine) in a primary care setting in India.