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## EPP0744

### A case report of cognitive behavioural and emotional therapy for depression in an ultra-high risk patient

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**Introduction:** Psychotic disorders are associated with a degree of disability that is much more considerable if the duration of untreated psychosis is prolonged. This fact highlights the importance of early intervention strategies among individuals at ultra-high risk (UHR) for psychosis, often struggle with depressive symptoms.

**Objectives:** The objective of this work was to evaluate the effectiveness of cognitive-behavioral and emotional therapy on depressive symptoms in a patient at high risk of psychosis.

**Methods:** This is a detailed case report of a young adult at UHR for psychosis who was referred to psychiatry department "A" at Razi Hospital for treatment of depression symptoms.

The patient had benefited from 15 sessions of cognitive-behavioral and emotional psychotherapy, over eight months, from July 2021 to February 2022, at the rate of one 45-minute session per two weeks. The main psychotherapeutic techniques used were: behavioral activation, cognitive restructuring and relaxation.

An initial and final assessment was performed by the Hamilton Depression Scale and by the comprehensive assessment of mental states at risk.

**Results:** The clinical case illustrated concerns a 21-year-old female with a state of high risk of psychosis, suffering from depression symptoms that had been worsen since two years.

As the therapy progressed, an improvement in depressive symptoms and functioning has been noticed, by a decrease in the score of the Hamilton scale, from 28 to 11, with a response estimated at 61% and a score for social functioning and professional, initially estimated between 21 and 30, to became between 41 and 50 after therapy.

The active participation of the patient, and her assiduity were important factors in this success.

**Conclusions:** Cognitive-behavioral and emotional therapies for depressive symptoms could constitute an effective intervention approach for subjects at high risk of psychosis, allowing the improvement of the prognosis of psychotic disorders.

**Disclosure of Interest:** None Declared

## Research Methodology

### EPP0746

#### Experimental models of autism spectrum disorders on the example of the use of brain organelles

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**Introduction:** ASD are heterogeneous pathological conditions characterized by difficulties in establishing social contacts and the manifestation of repetitive behavior. An atypical trajectory of brain maturation, impaired neurogenesis, synaptogenesis, and an imbalance in the excitatory and inhibitory systems of the CNS form the morphofunctional basis of the ASD.

**Objectives:** To understand the functioning of this complexly organized system in time and space, a three-dimensional model is needed. The closest in vitro model of the human brain from early embryonic stages to aging is brain organoids. Human brain organoids are self-organizing three-dimensional cell aggregates derived from pluripotent stem cells (hiPSCs)

**Methods:** Organelles generalize neurogenesis, gliogenesis, synaptogenesis, cell migration and cell differentiation, gyrification of the cerebral cortex, and reflect the connections of brain regions.

**Results:** The use of telencephalon organelles in the RAS model revealed a deficit in neuronal migration, acceleration and disruption of cell cycle synchronization, aberrant cell proliferation, abundant synaptogenesis, temporary deviations in the development of the cortex, increased branching of neurons, unbalanced inhibitory differentiation of neurons, high activity of ion channels is a consequence of a violation of FOXG1 activity. Organelles generalize neurogenesis, gliogenesis, synaptogenesis, cell migration and cell differentiation, gyrification of the cerebral cortex, and reflect the connections of brain regions. The use of telencephalon organelles in the RAS model revealed a deficit in neuronal migration, acceleration and disruption of cell cycle synchronization, aberrant cell proliferation, abundant synaptogenesis, temporary deviations in the development of the cortex, increased branching of neurons, unbalanced inhibitory differentiation of neurons, high activity of ion channels is a consequence of a violation of FOXG1 activity.

**Conclusions:** hiPSCs can provide insight into the cellular mechanisms underlying ASD as a neuropsychiatric disorder, providing access to the development of platforms for in vitro drug screening and individualized patient therapy.

**Disclosure of Interest:** None Declared

### EPP0747

#### Combined clinical and laboratory diagnostics of neurodegenerative disorders

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**Introduction:** Alzheimer's disease (AD) is a neurodegenerative pathology that develops mainly in elderly and senile people.

**Objectives:** The aim of the study was a comparative analysis of the results of neuropsychological tests with the indicators of the study of oral fluid and buccal epithelium cytograms in patients with Alzheimer's disease.

**Methods:** In the main group of 12 patients with Alzheimer's disease,  $m=76.25\pm 4.89$ . There were 12 cognitively healthy people in the control group. The average MMSE score among the observations of the main group was  $13.42\pm 3.63$ . The ADAS-COG scale was used to detail the impaired cognitive functions. The concomitant pathology is compensated. The content of BDNF, TNF- $\alpha$ , IL1RA, IL-6, and IL-8 was determined in the oral fluid and in the blood serum. The concentration of salivary and serum biomarkers was determined by multiparametric fluorescence analysis with magnetic microspheres. Micronuclei, karyopycnosis, karyorexis, and karyolysis were determined in the cellular structures of the buccal epithelium. The material for cytological examination was collected from the inner surface of the cheek.

**Results:** When analyzing buccal cytograms, attention was drawn to a pronounced increase in the number of cells with micronuclei in patients with AD to 1.8%; in the control group, the median was 0.1% ( $p<0.05$ ). A direct correlation was established between the number of binuclear cells and the level of BDNF in the blood serum ( $r=0.646$ ;  $p=0.03$ ) in patients with AD. It is also important to note that the level of serum BDNF had a significant direct correlation with immediate memory, and the concentration of salivary BDNF correlates with the parameter of naming objects.

**Conclusions:** Correlations between amnesia, speech disorders, praxis, gnosis and pathology of the oral fluid and buccal epithelium, especially with the severity of karyopycnosis and karyorexis, have been established, indicating a direct correlation between the neurodegenerative process pathogenetically associated with Alzheimer's disease and the processes of systemic inflammation and degeneration of the buccal epithelium.

**Disclosure of Interest:** None Declared

## EPP0748

### Efficacy, safety and methodological quality of light therapy and sleep improvement interventions for people with attention deficit hyperactivity disorder (ADHD)

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**Introduction:** Large proportion of patients with ADHD experience sleep problems. Well conducted, good quality clinical research could identify non-pharmacological sleep improvement interventions that would benefit patients with ADHD and would inform evidence based guidelines for sleep management in ADHD.

**Objectives:** To conduct a novel meta-research assessment of available clinical trials in the field of light therapy and non-pharmacological sleep improvement interventions for people with ADHD.

**Methods:** Peer-reviewed publications of clinical trials were analysed. An advanced literature search strategy was performed in major medical databases, including EMBASE, MEDLINE, the Cochrane Central Register of Controlled Trials and PsycINFO. Available data at WHO-approved clinical trial registries were searched and linked to the published literature. Detailed methodological assessment of results was conducted using the Cochrane Risk of Bias Tool version 2.0 (ROB2), conflict of interest, spin and favourability of findings. Reduction in ADHD symptom severity and improvement of sleep quality served as primary outcomes for the efficacy analysis. Any adverse events were recorded. Statistical analysis of the primary outcomes was conducted by calculating standardised mean difference and transformed as necessary. Publication bias was evaluated with contour enhanced funnel plots and the trim-and-fill procedure, and by summarising unpublished trials.

**Results:** Analysed clinical trials often had a high risk of bias (evaluated by the ROB2). The primary outcome interpretation and overall trial conclusions frequently favoured the trial intervention. Clinical trials showed an association between primary outcome effect size and interpretation, and risk of bias. Clinical research in this field faces many of the same challenges identified for complex interventions in mental health, such as small sample size, lack of funding and difficulties with blinding.

**Conclusions:** Clinical research regarding light therapy and non-pharmacological sleep improvement interventions for ADHD patients indicates safety and effectiveness but studies often lack methodological rigour.

**Disclosure of Interest:** None Declared

## EPP0749

### The sunshine induced placebo effect in Major Depressive Disorder patients exhibits gender differences

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**Introduction:** Sunshine increases placebo effect in major depressive disorder (MDD) patients (Gailledreau et al., 2015). Kokras et al. (2014) showed that sunshine induces different responses in female than male mice in preclinical models of depression.

**Objectives:** To determine if the sunshine induced placebo effect exhibits gender differences in human

**Methods:** Data from 9 double-blind, randomized, placebo-controlled studies of antidepressants conducted by the French GICIPI network were reviewed. MADRS (5) or HAM-D 17 (4) were used as the main efficacy tool. For each patient, variation of scores (Delta MADRS/Delta HAM-D) between two consecutive visits were correlated with the average sunshine index observed at noon between these visits. Sunshine indexes were provided by Météo-France. Correlations were computed with Microsoft Excel.

**Results:** Sunshine increases placebo effect: however analysis of both genders ( $n=52$ ) demonstrates no statistically significant (NS) correlation ( $r^2=0.0064$ ). Analysis of the males ( $n=8$ ) demonstrates NS correlation in cloudy ( $< 1000$  Joules/cm<sup>2</sup>), variable (1000-2000 Joules/cm<sup>2</sup>) or sunny ( $> 2000$  Joules/cm<sup>2</sup>) weather. Although analysis of the females ( $n=44$ ) demonstrates NS