

## Bipolar 04 / Neuroscience in Psychiatry

### EPP0285

#### Are there differences in affective temperaments between patients with Bipolar I and II disorder?

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**Introduction:** Bipolar Disorder (BD) is a severe mental disorder with a high genetic load, in which is relevant to identify potential differences in affective temperaments between both diagnostic subtypes.

**Objectives:** To find differences between BDI and BDII patients in affective temperaments evaluated by Temperament Evaluation of the Memphis, Pisa, Paris, and San Diego TEMPS-A.

**Methods:** A sample of 407 euthymic patients with diagnosis of bipolar disorder type I (BDI= 307) or type II (BDII= 100) according to DSM-IV-TR criteria being age 18 or older was recruited from the Bipolar and Depressive Disorders Unit of the Hospital Clinic of Barcelona. Five affective temperaments were evaluated using the TEMPS-A. It was initially verified that the scores of these temperaments do not fulfil the assumption of normality by means of tests. Differences in means were estimated using Mann-Whitney U and Chi square tests ( $p < 0.05$ ) as appropriate, and ANCOVA controlling the effect of confounding variables.

**Results:** Data revealed that patients with BD II had significantly higher scores in four affective temperaments: dysthymic, cyclothymic, irritable and anxious compared to BDI. After controlling the most relevant moderating variables, BDII patients continued to show higher scores in irritable temperament.

**Conclusions:** BDII patients present a more irritable temperament than BDI ( $p=0,037$ ), which can affect the course and management of the disease. It could be suggested that presenting higher scores of these temperaments could be associated with BDII and further studies are needed to replicate this finding since it might help the clinicians in early phases to guide in the diagnostic process.

**Disclosure:** No significant relationships.

**Keywords:** TEMPS-A; temperament; bipolar disorder

### EPP0284

#### Evaluation of Brain Functions in Conversion Disorder with PET/MRI

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**Introduction:** Since there is no objective criteria, unique clinical symptom or laboratory test to make the diagnosis of conversion disorder; its diagnosis and treatment is challenging which leads to a poor prognosis.

**Objectives:** The aim of this study is to investigate the brain metabolic activity of patients with conversion disorder with PET/MRI.

**Methods:** 12 conversion disorder patients were included. Somatosensory Amplification Scale, Somatoform Dissociation Scale, Patient Health Questionnaire-15, Toronto Alexithymia Scale were filled in by the participants. Neurological, mental status examinations, Wechsler Adult Intelligence Scale-Revised Form (WAIS-R) and brain F18-FDG-PET/MRI were performed. Structured Clinical Interview for DSM-5, Hamilton Depression and Anxiety Scales were administered.

**Results:** 83% of the patients were female, the mean age was 33 years and average education period was 10,2 years. WAIS-R total scores were consistent with low average intelligence level. Cerebral hypermetabolism was detected in the primary visual cortex. Average regional brain metabolic activity had a tendency to increase in bilateral prefrontal, right sensorimotor (SM), cingulate, right inferior parietal, occipital lateral, right temporal lateral cortices and cerebellum. Each region was metabolically correlated with the homologous contralateral regions. Significant correlations in the same direction was found between frontal and occipital lateral & primary visual cortices; cerebellum and left sensorimotor cortex; anterior cingulate cortex (ACC) and superior parietal cortex & cerebellum. No correlations were found between ACC and left SM cortex.

**Conclusions:** Findings of our study indicate that there are moderate changes in regional brain metabolic activities and inter-regional correlations in patients with conversion disorder. In order to confirm these findings, further functional neuroimaging studies are needed.

**Disclosure:** No significant relationships.

**Keywords:** Neuroimaging; Conversion Disorder; Brain metabolism; PET/MRI

### EPP0285

#### Neurotrophics correlates and functional remediation in bipolar disorder. A pilot study

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**Introduction:** Bipolar disorder (BD) is a complex mental disorder. Cognitive dysfunction represents a core feature, strongly related with patients' functional outcome. Functional Remediation (FR), is an integrated neuropsychological and psychosocial rehabilitation treatment aimed at enhancing cognitive functions in order to achieve full functional recovery (Torrent et al., 2013). Evidence highlighted an association of neurotrophins and cognitive dysfunctions. Particularly, BDNF has been investigated a potential biomarker. Preliminary studies explored the effects induced through FR interventions on serum BDNF levels (Bonnin et al., 2019).

Evidences suggest that high BDNF serum levels are related to good cognitive functioning (Mora et al., 2019). Results require further explorations. The present pilot study targets to identify the neurobiological correlates of response, investigating the potential neuroprotective role of the FR.

**Objectives:** Assess the effectiveness of FR in ameliorate cognitive deficits measured with BAC-A and psychosocial functioning with FAST, in modifying BDNF levels in a sample of euthymic patients with BD, compared to standard treatment.

**Methods:** Two arms(1:1)randomized, rater-blinded, controlled study of 30out-patients with BD-I and BD-II, according to DSM-5 criteria. Patients between 18 and 55 years in euthymic phase. Neurocognitive and clinical assessments, at the same times, serum assessment of BDNF levels will be performed.

All patients will be assessed at baseline(T0), at the end of treatment(T1) and at the 3-month follow-up(T2).

**Results:** After treatment, patients receiving FR show better cognitive and psychosocial performance than those receiving TAU.

**Conclusions:** Given the important role of neurotrophins in the pathogenesis of BD, identifying BD-specific biomarkers would contribute to understand the underlying neuro-pathophysiological processes and to personalize treatments.

**Disclosure:** No significant relationships.

**Keywords:** Functional Remediation; bipolar disorder; NEUROTROPHICS CORRELATES; bdnf

## EPP0286

### The TIMEBASE Study: Identifying digital biomarkers of illness activity in Bipolar disorder. Preliminary results.

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**Introduction:** Mood episodes in bipolar disorder (BD) are still identified with subjective retrospective reports and scales. Digital biomarkers, such as actigraphy, heart rate variability, or Electro-Dermal activity (EDA) have demonstrated their potential to objectively capture illness activity.

**Objectives:** To identify physiological digital signatures of illness activity during acute episodes of BD compared to euthymia and healthy controls (HC) using a novel wearable device (Empatica's E4).

**Methods:** A pragmatic exploratory study. The sample will include 3 independent groups totalizing 60 individuals: 36 BD inpatients admitted due to severe acute episodes of mania (N=12), depression (N=12), and mixed features (N=12), will wear the E4-device at four timepoints: the acute phase (T0), treatment response (T1), symptoms remission (T2) and during euthymia (T3; outpatient follow-up). 12 BD euthymic outpatients and 12 HC will be asked to wear the E4-device once. Data pre-processing included average down-sampling, channel time-alignment in 2D segments, 3D-array stacking of segments, and random shuffling for training/validation sets. Finally, machine learning algorithms will be applied.

**Results:** A total of 10 patients and 5 HC have been recruited so far. The preliminary results follow the first differences between the physiological digital biomarkers between manic and depressive episodes. 3 fully connected layers with 32 hidden units, rectified linear activation function (ReLU) activation, 25% dropout rate, significantly differentiated a manic from a depressive episode at different timepoints (T0, T1, T2).

**Conclusions:** New wearables technologies might provide objective decision-support parameters based on digital signatures of symptoms that would allow tailored treatments and early identification of symptoms.

**Disclosure:** No significant relationships.

**Keywords:** bipolar disorder; wearable; digital biomarker

## EPP0287

### Biological determinants of functioning in euthymic patients with Bipolar Disorder: A multicentric 3-year cohort study

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**Introduction:** Bipolar disorder is related with functional impairment in euthymia. The contribution of biological functions such as sleep, sexual functioning; or the presence of obesity on this loss remain understudied.

**Objectives:** The aim of this work was to study the influence of biological determinants in context with clinical and demographical determinants of functioning in a 3-year cohort of euthymic BD patients.

**Methods:** In this multicentric study 67 euthymic adult bipolar outpatients were followed during three years. Functioning was assessed with FAST, insomnia severity with Oviedo Sleep