## EPP0994

## Efficacy and clinical and neuroimaging biomarkers of response of two intensive and spaced treatment protocols of theta burst magnetic stimulation in treatment resistant depression

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**Introduction:** Resistant to treatment depression (RTD) is a prevalent disease that implies functional impairment and high resources consumption. Theta Burst Transcranial Magnetic Stimulation (TBS) in dorsolateral prefrontal cortex (DLPFC) is a novel therapy that has shown experimental efficacy and as an adjuvant strategy in RTD. The implementation of TBS in the Public National Health Service requires cost-effective protocols that achieve earlier responses and higher rates of effectiveness, and whose design is based on biomarkers of response so as to adequately select candidate patients.
**Objectives:** To assess the efficacy and safety of novel bilateral and unilateral intensive/spaced protocols of TBS in outpatients with unipolar/bipolar RTD compared with sham stimulation. Specific objectives: I) Comparison of mood change at the end of TBS protocol in the groups and maintenance of its effect at 3 months; II) Characterization of cerebral connectivity and metabolism patterns related to the effects of TBS; III) Analysis of the interaction between clinical and neuroimaging predictors so as to determine a RTD profile of patient that can benefit from TBS.
**Methods:** A two-year randomized double-blind clinical trial with 96 outpatients with TRD will be carried out. Participants will be randomized in three groups (active bilateral, active left and sham right and sham bilateral) to receive 22 active/sham sessions of continuous TBS (right DLPFC) and intermittent TBS (left DLPFC) during 6 weeks (w 1-2: 5 sessions/w, w 3-6: 3 sessions/w). Assessments of mood and side-effects will be carried out weekly. Functional neuroimaging will be a a simultaneous PET/MR acquisition previous and at the end of TBS treatment. Between-group comparisons of efficacy in terms of Hamilton Depression Rating Scale (HDRS-17) from basal to 6th week will be performed using controlled mixed regression models. Between-group comparisons will be made at baseline and after treatment, studying the imaging biomarkers obtained. Clinical and neuroimaging predictors of response will be integrated in machine learning models.
**Results:** The expected results of the project are summarized in the following hypotheses: 1) The intensive and spaced protocols of TBS as an adjuvant antidepressant treatment will have greater efficacy than sham stimulation in patients with TRD. 2) Both protocols will be safe, with mild side effects. 3) Unilateral and bilateral TBS protocols will involve changes in connectivity and cerebral metabolic consumption mainly in regions of the fronto-cingulo-temporal circuitry. 4) PET/MR imaging biomarkers will allow us to differentiate whether patients have responded to treatment with TBS.
**Conclusions:** This project may help to improve resistant to treatment depression management by personalizing TMS treatment with the use of neuroimaging biomarkers.

**Disclosure of Interest:** None Declared

## EPP0995

## Efficacy of two intensive and spaced protocols of theta burst transcranial magnetic stimulation in treatment-resistant depression: a double-blind randomized trial

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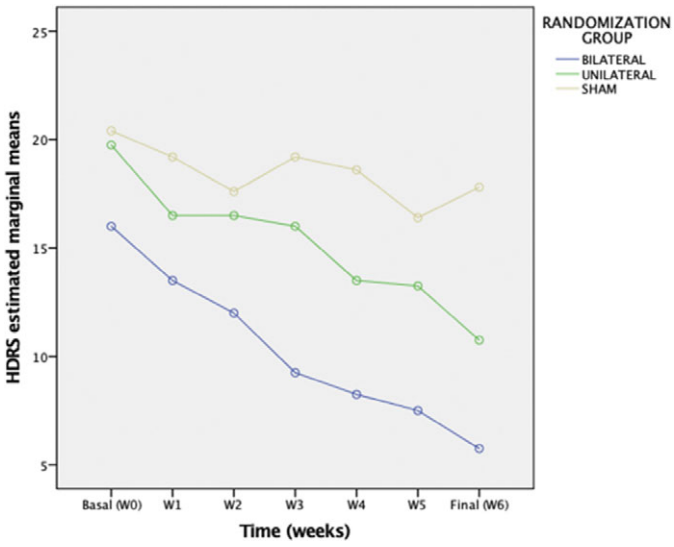
**Introduction:** Depression is the disease with the greatest burden of disability. Despite pharmacological options, up to 30% of depressions are considered resistant to treatment (RTD). Theta burst transcranial magnetic stimulation (TBS) on the dorsolateral prefrontal cortex allows the application of shorter protocols and with longer-lasting effects than conventional TMS. Its implementation in the Public Health System requires the design of efficient, cost-effective and accessible protocols for patients.
**Objectives:** The objective of this project is to assess the efficacy and safety of two intensive and spaced protocols (unilateral and bilateral) of 1800 pulses TBS compared to sham stimulation in outpatients with unipolar and bipolar TRD in a public hospital.
**Methods:** This project is the 1st double-blind placebo-controlled RCT with TBS in Spain. It is now in the recruitment phase. Patients receive a total of 22 sessions of 1800 pulses in 6 weeks: 5 days/week the 1st and 2nd weeks (10 sessions) and 3 sessions/week the following weeks (12 sessions). Patients are randomized into three groups: i) bilateral, ii) left unilateral, and iii) sham. The main variable is the change in the HDRS-17 score at the end of treatment compared to baseline. The results were analyzed with a general linear model of HDRS, using time as the intrasubject factor and randomization group as the intersubject factor, using resistance to treatment (Maudsley Score) and diagnosis (bipolar, unipolar) as covariates.
**Results:** Preliminary results from 13 participants (nbil=4, nuni=4, nsham=5) reveal a significant effect of (group x time) on HDRS change (p= 0.020) with no influence of Maudsley Score or diagnosis. The bilateral group presented a greater decrease in the HDRS with a mean difference of 4,38 points [CI95% 0,17-8,58), (p=0.043)] with respect to the unilateral group and a difference of 8.23 [CI95% 4,24-12,21)(p =0.001)] compared to the sham group.

**Table 1:** Sample description. Data shown are means and standar deviations. In bold significant diferences p<0,05.

| | Bilateral TBS (n=4) | Unilateral TBS (n=4) | Sham TBS (n=5) |
|---|---|---|---|
| Age [M (SD)] | 55,50 (5,80) | 48,50 (16,86) | 56,40 (5,86) |
| Male: Female [n] | 0:4 | 2:2 | 3:2 |
| Depression:Bipolar disorder [n] | 3:1 | 3:1 | 4:1 |
| Length of depresive episode (months) [M (SD)] | 12,00 (4,08) | 16,50 (6,61) | 15,00 (5,83) |
| Current number of antidepressants [M (SD)] | 2,00 (0,82) | 1,75 (0,50) | 2,60 (0,55) |
| Maudsley score [M (SD)] | 7,00 (1,82) | 8,75 (1,5) | 7,90 (1,30) |
| Basal HDRS basal [M (SD)] | 16,00 (1,82) | 19,75 (4,03) | 20,40 (3,21) |
| Final HDRS [M (SD)] | **5,75 (3,30)** | **10,75 (3,10)** | **17,80 (2,49)** |
| Response /Remission[n (%)] | 3:**3** (75%) | 2:**0**(50:0%) | 0:**0** (0%) |

**Image:**




**Conclusions:** The results demonstrate the preliminary efficacy of intensive TBS protocols relative to sham.

**Disclosure of Interest:** None Declared

## EPP0996

### Prevalence and factors associated with depression among health care workers in the region of Sousse in Tunisia

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**Introduction:** Mental health disorder is common among working population worldwide and among health care-workers (HCWs) in particular. Depression is a major public health problem, with an economic impact because of lost days of work. Its prevention is essential and requires the identification of risk factors.
**Objectives:** The objectives of this work were to determine the epidemiological characteristics of depressive disorders in health care workers and identify their main risk factors.
**Methods:** A descriptive retrospective study was conducted on health care workers of Sousse in Tunisia who have had a long-term sick leave for depressive disorders from January 2010 to December 2021. data was collected from the medical records of the patients and completed with a telephone questionnaire
**Results:** The total number of cases was 650 with a prevalence of 12.8% and an incidence of 2 cases per 100 HCW. The median age was 50 years and the female workers represented 81% of cases. The majority of the sample were married (81%). Most of cases were nurses (43%) and health technician (19%). The median seniority of HCW in their jobs was 23 years with the first quartile at 12 and the third quartile at 31.
Around 48% of cases had severe depression. The severity of depression was significantly associated with working in surgical and emergency services, number of night shifts of 2 or more per week, the history of a psychiatric disorder other than depression, habits such as smoking and drinking, anxiety specificity and melancholy specificity of depression.
**Conclusions:** This study showed the importance of social and occupational factors of depression among HCW. Action policies focusing on workplace interventions appear to be relevant.

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## Neuroscience in Psychiatry 02

## EPP0997

### Decrease in anterior cingulate cortex GABA in schizophrenia at early stage

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