20-minute sessions for 5 days with intersession interval of 3-hours. Clinical global impression-improvement scale (CGI-I) was rated at the end of the course for every patient. All the patients who were found to show response (“much improved” and “very much improved”) received repeat cycles of add-on booster tDCS after a varying duration ranging from 1–32 months from initial treatment course, due to relapse/persistence of AH. Thirteen out of fifteen patients received one booster cycle while one patient received 3 booster cycles and another received 12 booster cycles. We conducted a spearman’s rank correlation test to determine the correlation between CGI-I score rating at the end of add-on tDCS, and the duration of maintenance of improvement before relapse/ worsening of AH.

Results: Six of the fifteen patients (40%) had responded “very much improved” and nine (60%) patients had responded “much improved” to tDCS in the initial cycle. It was found that 50% of the initial “very much improved” responders (n=3) had a comparable response to tDCS after booster sessions for relapse of symptoms while 50% of patients showed “much improved” (n=2) and “minimally improved” (n=1) response in the booster sessions. Among the nine patients who showed “much improved” response from the initial cycle, one patient showed better response than initial cycle (“very much improved”) to booster session. Five patients showed “minimally changed” response in the second cycle in the booster sessions while three patients had comparable responses. The average duration of symptom free interval/ maintenance of improvement with initial cycle of tDCS was found to be 10.46± 9.23 months. The CGI improvement from the initial add-on tDCS course and the duration of the maintenance of improvement/symptom-free interval before the booster session was not found to be significantly correlated (r=0.332, p=0.226) Discussion: A reduction in hallucinations was noted with booster tDCS in patients who had responded to the initial course of add-on tDCS. Booster tDCS is a feasible option and given its cost-effectiveness and ease of administration, booster sessions of tDCS can be considered for resurgence of symptoms. Future studies are recommended in systematically exploring maintenance tDCS as an add-on treatment for persistent/recurrent AVH in schizophrenia.

S196. TRANSCRANIAL MAGNETIC STIMULATION IN SCHIZOPHRENIA WITH PROMINENT NEGATIVE SYMPTOMS- A REVIEW OF THE LITERATURE

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Background: Negative symptoms in schizophrenia are associated with lower quality of life, worse functional prognosis and poorer response to the psychopharmacological treatment [1]. Many efforts have been made to find new approaches for negative symptoms, and neuromodulation techniques may represent a solution for these patients when antipsychotics have reached their limits of efficacy [2]. Transcranial magnetic stimulation (TMS) is based on the use of alternating magnetic fields to induce electrical current in the cortical areas, being mainly used for patients with treatment-resistant depression and it is considered safe and well tolerated [3].

Methods: A narrative review of data regarding the efficacy of transcranial magnetic stimulation for patients with schizophrenia with prominent negative symptoms was performed. Papers published between January 2000 and July 2019 in the main electronic databases (PubMed, Cochrane, EMBASE, CINAHL) were included in this review. The keywords used for database search were “schizophrenia” and “negative symptoms” and “transcranial magnetic stimulation” or “repetitive transcranial magnetic stimulation”.

Results: The treatment of negative symptoms in schizophrenia with high frequency TMS has been associated with favorable results in clinical trials. The targeted zones were dorsolateral prefrontal cortex, either bilaterally or only on the left side. The results varied upon the stimulation regimen, including duration, frequency, uni- versus bilaterally application etc. Two meta-analyses were identified and their results supported an effect size from 0.58 to 0.63 [2,3]. However, negative results derived from well designed clinical trials exist, which show no difference in the Positive and Negative Syndromes Scale (PANSS) - negative symptom score between rTMS and sham rTMS [4,5]. An exploratory analysis of a large-scale trial showed the impact of rTMS on different negative symptom domains confirmed no additional beneficial effect of the active comparative to sham rTMS [5]. Also, data exist about the potential of rTMS for increasing task-related in frontal areas in patients with schizophrenia with negative predominant symptoms, which may grant further exploration of the mechanisms underlying the effects of rTMS.

Discussion: Data about the efficacy of TMS in schizophrenia with negative symptoms are controversial, because both evidence to support its efficacy and its lack of efficacy exist in clinical trials. However, meta-analyses support an important size effect which may be comparable to that of the pharmacological treatment.

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S197. PAVLOVIAN CONDITIONED HALLUCINATIONS TASKS AND PSYCHOMETRIC THRESHOLDING IN ENRICHED ONLINE SAMPLE

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Background: The predictive coding framework of perception postulates that we automatically infer what is around us by combining our sensory input with our prior beliefs. Mathematical models based in Bayesian statistics can describe this process, elucidating both typical as well as atypical brain processes, such as emergence of hallucinations. A previous study using a Pavlovian conditioning task showed that hallucinations are a result of overweighting of prior beliefs over incoming sensory evidence. Participants with Auditory Verbal Hallucinations (AVH) were more susceptible to auditory conditioned hallucinations (ACH) than individuals without AVH, regardless of a diagnosis of psychosis. This suggests a common underlying mechanism for the emergence of hallucinations irrespective of functional status. To further investigate these mechanisms, we developed a visual conditioned hallucinations (VCH) task, modeled after the original ACH task. Together, these tasks can elucidate the specificity of conditioned hallucinations with regards to sensory modality.

In addition to the deployment of the VCH, we also tested the feasibility of the first known online deployment of QUEST, an adaptive psychometric thresholding method, in a targeted population.

Methods: Task Methodology. Individual trials of the task consist of simultaneous presentation of a faintly-presented (low-contrast) visual stimulus (Gaussian stripes embedded in visual white noise) and a salient auditory stimulus (loud tone). An association between visual and auditory stimuli
is established, followed by testing of the strength of this association by presenting the auditory stimulus alone. Trials where the visual stimulus is not presented, but nevertheless reported to be perceived are considered as CH trials.

Data Collection and Analysis. Subjects were recruited on two platforms, the Amazon-powered Mechanical Turk (MTurk) and the COPE Project an initiative targeted at individuals with unusual experiences. Analyses were conducted by pooling across the four groups and grouping based on presence of visual or auditory hallucinations, creating four groups: AH+/VH-, AH+/VH+, AH-/VH-, AH-/VH-. Between-group differences were analyzed using two-sample t-tests.

Results: The responses of participants across the board, both in the control sample and in those with perceptual experiences, validates the efficacy of using the QUEST threshold paradigm to predict response to threshold levels. Participants who were assigned VH+ groups showed a significantly higher rate of reporting CHs, compared to the control group with no hallucinatory experiences (p < 0.01). Similarly, participants assigned to AH+ groups also showed a significantly higher rate of reporting CHs (p < 0.01). Differential parameter values for a computational model assessing perceptual inference were computational signatures of CH were also examined between groups, as were neural signatures encoding visual versus auditory-mediated conditioned hallucinations.

Discussion: In this study, we show the feasibility of psychometric experiments in a targeted online sample of individuals with unusual experiences. We also demonstrate that the differential parameter values of the computational modeling of visually conditioned hallucinations differentiate between individuals with and without hallucinations, leading to better understanding of the neural signatures of hallucinations and potential therapeutic targets in clinical populations.

S198. SELF-DISTURBANCES AND THEIR NEURAL SIGNATURES IN SCHIZOPHRENIA

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Background: The self-disturbances (SDs) concept is considered to be part of the Schneider’s first rank symptoms, i.e., thought-withdrawal, thought-insertion, thought-broadcasting, somatic-passivity experiences, mental/motor automatisms, disrupted unitary self-experience (Mishara et al., 2014). SDs were originally described by W. Mayer-Gross (1920), who observed them in psychotic patients.

Methods: We classified Mayer-Gross’ findings on SDs into the following categories: experience is new/compelling (aberrant salience), reduced access/importance of autobiographical past, cognitions/emotions occur independently from self’s volition, foreign agents have power over self and developed an SDs scale based on these categories and cognitive domains (perception, motor, speech, thinking etc.). Scale is applied as a measure of the frequency of the experiences. In our current study on phenomenology and neurobiology of psychosis, i.e., thought-withdrawal, thought-insertion, thought-broadcasting, somatic-passivity experiences, mental/motor automatisms, disrupted unitary self-experience (Mishara et al., 2014). SDs were originally described by W. Mayer-Gross (1920), who observed them in psychotic patients.

Results: The scale SDs differs significantly between groups: SDs = 8.42, p < 0.001. The scale identifies self-disturbances in schizophrenia and the impact of a time-limited standardized protocol to avoid this bias.

Methods: Two different speech samples from a previous study were compared: 1) using free speech (N = 60, Mota 2014) or 2) using the proposed time-limited-proto (sub-sample of N = 31, Mota 2017). For both samples, we calculated connectedness (such as LSC) in two in two different transcribing conditions: with and without paragraphs. The paragraphs represented the interviewer’s stimuli, and when paragraphs were deleted, we connected the subject’s speech in a unique line.

Results: Interviewer’s interferences marked by line-breaks or paragraphs had an impact on connectedness results for the freely speaking protocol (LSC Schizophrenia x Non-Schizophrenia: p = 0.0051 and without paragraph, LSC Schizophrenia x Non-Schizophrenia: p = 0.7764). The standardized protocol with a time limit was sufficient to avoid this bias: we found that there are no differences in considering or not paragraphs, with reports of 30 seconds (LSC Schizophrenia x Non-Schizophrenia: p = 0.0017 and without paragraph, LSC Schizophrenia x Non-Schizophrenia: p=0.0003)

Discussion: The standardized data collection protocol seems to be robust in comparison to not controlled methods to collect free speech, allowing the automatization of data gathering and transcriptions, preventing methodological errors in future SpeechGraphs applications.

S200. COMPARISON BETWEEN LONG-ACTING INJECTABLE ARIPIPRAZOLE VERSUS PALIPERIDONE PALMITATE IN THE TREATMENT OF SCHIZOPHRENIA: SYSTEMATIC REVIEW AND INDIRECT TREATMENT COMPARISON

Abstract not included.

S201. HIPPOCAMPAL SUBFIELD VOLUMES AND CHANGE IN BODY MASS OVER 12 MONTHS OF TREATMENT IN FIRST-EPISTEME SCHIZOPHRENIA SPECTRUM DISORDERS

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Supported by the grant projects MH CR AZV 17-32957A and MEYS NPU4NUDZ: LO1611.