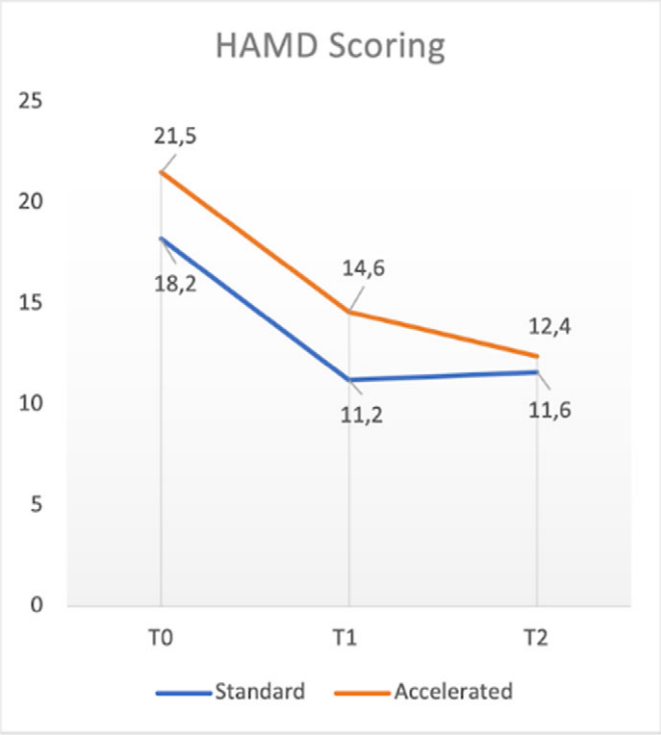
four weeks; n= 7) or accelerated (two sessions per day, five days a week, for two weeks; n=6) rTMS treatment protocols. In both cases, rTMS was performed on the left dorsolateral prefrontal cortex, high frequency (10 Hz) at 120% of the motor threshold, 3000 pulses per sessions. Primary outcome measures included HAM-D, MADRS, and CGI-S scores at baseline (T0), at the end of rTMS treatment (T1), and after 1 month (T2), as well as tolerability based on adverse effects. Paired Samples *t*-Test for continuous variables was used to compare psychometric scales at each timepoint, while *t*-Test was used to compare differences between the two groups.

Results: With respect to total sample, in terms of primary outcome measures a significant reduction of HAM-D, MADRS and CGI-S total scores between T0 and T1 (t: 3.01, p<0.05; t: 1.692, p<0.5; t:3.207, p<0.05 respectively), T1 and T2 (t: 3.264, p<0.05: t:2.669, p<0.05; t:.085, p=0.437 respectively) and T0 and T2 (t:5.669, p<0.05; t=4.711, p<0.05; t:2.551, p<0.05 respectively) was found. No significant differences in terms of efficacy were found between the two groups. One patient dropped-out for reasons not related to rTMS treatment. Mild and transient headache during the stimulation was the only side effect reported (4 patients).

Image:



Conclusions: Consistently with previous literature studies, our preliminary results supported the evidence of comparable efficacy and tolerability between accelerated and standard rTMS protocols. In the future, larger, blinded, and controlled trials might support these conclusions and further address treatment parameters of novel accelerated rTMS protocols.

Disclosure of Interest: None Declared

O0109

EMDR as a treatment option for conditions other than PTSD

H. Abrebak*, F. Z. Chamsi, A. Essafi, A. Taqui, S. Radi and A. El ammouri

Psychiatric department, faculty of medicine of tangier, Tangier, Morocco
*Corresponding author.
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Introduction: Eye movement desensitization and reprocessing (EMDR) is a psychotherapeutic approach that has been shown to be effective in the treatment of post-traumatic stress disorder (PTSD). The technique is known to facilitate the reprocessing of maladaptive memories thought to be at the heart of this pathology. Strong evidence shows that traumatic events can contribute to the onset of serious mental disorders and can worsen their prognosis. Therefore, research on EMDR therapy has increased beyond PTSD and several studies have analyzed the effect of this therapy in other mental health conditions such as psychosis, bipolar disorder, depression, anxiety disorders, substance use disorders and chronic pain.

Objectives: The objective of this systematic review is to summarize the most important results of available studies conducted in this area.

Methods: We performed a systematic literature search among PubMed, ScienceDirect and Scopus. Studies included work published up to 2021

The search was performed automatically by title in each database and included the keywords "EMDR", "Eye Movement Desensitization and Reprocessing" excluding those focusing on trauma and PTSD

Results: Studies are still sparse in these comorbid conditions, but available evidence suggests that EMDR therapy improves trauma-associated symptoms and has a minor effect on primary disorders by achieving partial symptomatic improvement. A positive effect has been reported in many pathological situations, including addictions, somatoform disorders, sexual dysfunctions, eating disorders, adult personality disorders, mood disorders, severe stress reaction, anxiety disorders, pain, neurodegenerative disorders, mental disorders of childhood and adolescence and sleep.

Conclusions: Despite a generally positive view of EMDR as an alternative treatment option, more methodologically rigorous studies are needed.

Disclosure of Interest: None Declared

O0110

Methylation changes in association with early life stress and trauma-focused psychotherapy in treatment-resistant depression

R. Carvalho Silva[1], C. Hohoff[2], P. Martini[1], M. Bortolomasi[3], R. Bazzanella[3], V. Menesello[4], M. Gennarelli[1,4], B. T. Baune[2,5,6] and A. Minelli[1,4]*

[1]Department of Molecular and Translational Medicine, University of Brescia, Brescia, Italy; [2]Department of Psychiatry, University of Münster, Münster, Germany; [3]Psychiatric Hospital "Villa Santa Chiara", Verona; [4]Genetics Unit, IRCCS Istituto Centro San

Giovanni di Dio Fatebenefratelli, Brescia, Italy; [5]Department of Psychiatry, Melbourne Medical School, University of Melbourne, Melbourne and [6]The Florey Institute of Neuroscience and Mental Health, The University of Melbourne, Parkville, VIC, Australia
*Corresponding author.
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Introduction: Early life stress (ELS) associates with unfavourable outcome in Major depressive disorder (MDD) and treatment-resistant depression (TRD). Trauma-focused psychotherapy benefits TRD patients exposed to ELS. Epigenetic processes are altered in stress-related disorders, but few studies show epigenetic signatures associated with trauma.
Objectives: We performed an epigenome-wide association study (EWAS) to explore the relation between methylation changes in TRD patients characterized for recent and ELS and trauma-focused psychotherapy outcomes.
Methods: Thirty TRD patients participated. They underwent psychotherapy, from which 12 cognitive behavioural therapy and 18 Eye Movement Desensitization and Reprocessing (EMDR). We used validated interviews and questionnaires for symptom evaluation and stress exposure. Patients were evaluated at T0 (baseline), T8 (end of psychotherapy), T12 (follow-up) and T26. Methylation was profiled with Illumina Infinium EPIC array for T0, T8 and T12. Methylation levels were quantified after quality control and normalization using ChAMP R package. We tested the association between B-values for each CpG site (each probe set) and each phenotype/condition using a linear model approach (with paired values) as implemented in the Limma R package. P-values were adjusted using Benjamini & Hochberg method. Probe sets were considered significant with an adjusted p-value $q \leq 0.05$. CpG site annotation was performed using IlluminaHumanMethylationEPICanno.ilm10b2.hg19 R package (hg19 genome reference).
Results: Association analyses between baseline methylation levels and emotional abuse resulted in two significant probe sets annotated in *SLCO4A1* (p=1,72E-08; q=0,008), involved in sodium independent transmembrane substrate transport, and *GPNMB* (p=1,53E-07; q=0,022), involved in cell differentiation. Associations between baseline methylation levels and physical abuse resulted in one significant probe set annotated in *DDIT4L* (p=4,77E-08; q=0,035), involved in cell growth.
In longitudinal analyses, association between T0-T8 methylation levels and response at T8 resulted in two significant probe sets annotated in *PLEKHB1* (p=3,54E-08; q=0,013), involved in cell differentiation, and *NUDT4P2* (p=1,34E-07; q=0,032). Longitudinal T12-T0 EWAS analyses in patients undergoing EMDR resulted in 44 significant probe sets annotated in genes, highlighting *MAD1L1* (p=6,28E-07; q=0,035), involved in cell division, and *TNFAIP3* (p=3,00E-06; q=0,045), which regulates immunity.
Conclusions: We identified epigenetic signatures of ELS in TRD patients, suggesting that ELS may modulate the intensity of epigenetic alterations. Longitudinal methylation analyses along psychotherapy showed significant genes in relation to response, especially for patients undergoing EMDR. Some genes are associated with post-traumatic stress disorder (*MAD1L1*) and anxiety disorders and MDD (*TNFAIP3*).

Disclosure of Interest: None Declared

O0111

Effects of cognitive rehabilitation interventions on non-central nervous system cancer survivors: A meta-analysis

A. F. Oliveira[1]*, J. D. Reis[2], I. M. Santos[3] and A. Torres[1,4]

[1]Center for Health Technology and Services Research of the Health Research Network (CINTESIS@RISE), Department of Education and Psychology, University of Aveiro, Aveiro, Portugal; [2]Department of Mathematics, University of Aveiro, Aveiro, Portugal; [3]William James Center for Research (WJCR), Department of Education and Psychology, University of Aveiro, Aveiro, Portugal and [4]Department of Psychology and Education, Faculty of Human and Social Sciences, University of Beira Interior, Covilhã, Portugal
*Corresponding author.
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Introduction: Cancer treatments can have a detrimental impact on cancer survivors' cognitive function. Cognitive rehabilitation is considered the first-line intervention to address cognitive difficulties of cancer survivors. Nevertheless, its efficacy remains unclear.
Objectives: This meta-analysis aimed to understand the effects of cognitive rehabilitation in non-central system (non-CNS) cancer survivors, through the assessment of the overall efficacy on subjective cognitive outcomes.
Methods: This meta-analysis was conducted according to the Preferred Reporting Items for Systematic Review and Meta-Analysis statement. An electronic search on the databases PubMed, Scopus, and Web of Science was conducted in May 2021, considering the past 15 years, by two independent authors. Studies were eligible if they included cancer survivors (excluding CNS cancers) who were exposed to cognitive rehabilitation interventions, in which the subjective cognitive effects were measured through self-report questionnaires. The quality of studies was assessed using the Cochrane Risk of Bias Tool for Randomized Trials. The effect size was the standardized mean difference in the cognitive assessment, between baseline and post-intervention. Statistical heterogeneity was assessed using I^2 Statistic. Publication bias was evaluated with Egger's test. $P<0.05$ was considered statistically significant. The meta-analysis was performed using R software.
Results: Among 14 studies, with 1115 cancer survivors, one study included a pediatric population, other young adult survivors, and the remaining adult population. The most used scale for measuring cognitive changes was the Functional Assessment of Cancer Therapy-Cognitive Function (FACT-Cog) and, as recommended, the Perceived Cognitive Impairments (PCI) subscale was used as the primary measure of subjective cognitive function. Results indicated beneficial effects following cognitive rehabilitation, with an overall standard mean difference between pre- and post-treatment of 3.4447, with CI95% [1.5543; 5.3350], p-value<0.0004. The subgroup analysis between the measures of cognitive outcomes showed that the heterogeneity is Group=Other 0.00% (I^2) and for the Group=FACT-Cog PCI is 86% (I^2). Analyzing the FACT-Cog PCI, the CI95% [-2.93; 6.43] includes 0, meaning that the overall effect in this subgroup is non-significant. The meta-analysis does not demonstrate publication bias (p-value of the Egger test=0.3220).
Conclusions: Improvement of cognitive function in non-CNS survivors throughout cognitive rehabilitation appears to be effective. The findings of this meta-analysis can help inform clinical practice and assist practitioners in recommending and developing