

depression. They also had a higher error rate than healthy controls $U = 6462.5$; $p = .021$, especially in words from the neutral ($U = 6292$; $p = .008$) and happiness category ($U = 6585$; $p = .031$). However, there was no association between subjective cognitive impairment and performance in memory tasks. The regression analysis showed that depressive symptoms and intensity of rumination are better predictors of subjective cognitive deficits than objective performance on a memory task. The results of PDQ-20 were correlated with the error rate of words from categories: Happiness ($r = -.162^{**}$), Sad ($r = -.116^*$) and Neutral ($r = -.145^{**}$). Words from categories Happiness, Disgust and Neutral were significantly better recognized than Unclassified, Fear or Sad group of words $\chi^2 F(6) = 132.685$; $p < .001$. In MDD group recognition of Disgust words were statistically highest than Anger and Fear words $\chi^2 F(6) = 36.795$; $p < .001$. The recognition of Happiness and Neutral word were not significantly different to other words.

Conclusions: Cognitive problems are common in depression and affect quality of life. Subjective cognitive impairment is more closely related to rumination than objective cognitive impairment among healthy participants and patients with major depressive disorder. Emotional bias among depressive patients has been partially confirmed. Emotional impact is important for memory of words and subjective perception of cognition.

Categories:

Neuropsychiatry/Psychopharmacology

Keyword 1: depression

Keyword 2: emotional processes

Keyword 3: cognitive functioning

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61 Increased Apathy Post-Laser Ablation for Refractory Obsessive-Compulsive Disorder

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Objective: Severe OCD is often nonresponsive to pharmacological and behavioral therapies and thus surgical interventions are emerging. Surgical interventions have proven to be efficacious for treating refractory OCD, however limited publications suggest 22-40% of patients experience transient apathy and disinhibition post-surgery (McLaughlin et al., 2021). Apathy is highly associated with the same brain regions, the prefrontal cortex, striatum, and thalamus, which have also been implicated in OCD symptoms (Le Heron et al., 2018). Prior research noting post-surgical changes in apathy in OCD either used physician observations or less precise surgical methods (i.e., gamma knife or radiofrequency ablation). Apathy has also been highly associated with depression and executive dysfunction (Raffard et al, 2020) and often not co-assessed in prior studies. The newest intervention, cutting-edge MR-guided laser interstitial thermal therapy (LITT), limits damage outside the region of interest by precise control of thermal application in real-time. Thus, the current case series aims to investigate objective patient-reported change in apathy, disinhibition, depression, and executive dysfunction following anterior capsulotomy via this newest surgical approach for OCD.

Participants and Methods: In this retrospective study, the responses of ten consecutive patients pre- and post-LITT on the following measures were examined: Frontal Systems Behavior Scale (FrSBe), Beck Depression Inventory-II (BDI-II), and Yale Brown Obsessive-Compulsive Scale (Y-BOCS). Reliable Change Index (RCI) was used to evaluate meaningful change in pre- and post-LITT self-reported levels of apathy, disinhibition, executive dysfunction, along with depressive symptoms. Per prior published guidelines, patient-reported Y-BOCS (range 0-40) scores were used to measure OCD symptoms with 24-34 % score reduction representing partial and 35% or greater score reduction representing full response (Pepper et al., 2019).

Results: Seven patients (70%) were male, with a sample mean age of 38.4 (SD=13.6) and a mean of 14.6 (SD =2.27) years of education. Mean Y-BOCS score decreased from 32 (SD=5.3) before surgery to 18.8 (SD=11.1) after. Over 65% had partial or full response in OCD symptoms post-surgery. Six patients endorsed increased apathy, with others endorsing no change. Half of the non-responders reported this increase in apathy. The cohort remained relatively stable in disinhibition and executive

dysfunction. Over half the cohort demonstrated a significant decrease in depressive symptoms. Interestingly, two of the non-responders and one responder endorsed increased apathy despite stable or improving depressive symptoms, disinhibition, and executive dysfunction.

Conclusions: Surgical interventions for psychiatric disorders are emerging quickly and being refined daily. In this cohort, anterior capsulotomy via LITT provided full or partial OCD recovery for most patients. However, most patients reported significant increases in apathy, despite experiencing a decrease in depressive symptoms, with stable disinhibition and executive dysfunction. Despite these promising improvements in OCD symptomatology via LITT, impact of surgery on apathy levels is clearly warranted using objective, quantifiable methods. As apathy has consistently been related to functional impairment and poorer quality of life, understanding this outcome is imperative in larger trials. Better understanding of this finding and underlying circuitry will allow patients to be fully informed regarding this promising surgical intervention.

Categories:

Neuropsychiatry/Psychopharmacology

Keyword 1: obsessive-compulsive disorder

Keyword 2: apathy

Keyword 3: treatment outcome

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62 Exploration of Sex Differences in Cannabis Use Patterns, Driving Performance, and Subjective Intoxication Effects

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Objective: Although some animal research suggests possible sex differences in response to

THC exposure (e.g., Cooper & Craft, 2018), there are limited human studies. One study found that among individuals rarely using cannabis, when given similar amounts of oral and vaporized THC females report greater subjective intoxication compared to males (Sholler et al., 2020). However, in a study of daily users, females reported indistinguishable levels of intoxication compared to males after smoking similar amounts (Cooper & Haney, 2014), while males and females using 1-4x/week showed similar levels of intoxication, despite females having lower blood THC and metabolite concentrations (Matheson et al., 2020). It is important to elucidate sex differences in biological indicators of cannabis intoxication given potential driving/workplace implications as states increasingly legalize use. The current study examined if when closely matching males and females on cannabis use variables there are predictable sex differences in residual whole blood THC and metabolite concentrations, and THC/metabolites, subjective appraisals of intoxication, and driving performance following acute cannabis consumption.

Participants and Methods: The current study was part of a randomized clinical trial (Marcotte et al., 2022). Participants smoked *ad libitum* THC cigarettes and then completed driving simulations, blood draws, and subjective measures of intoxication. The main outcomes were the change in Composite Drive Score (CDS; global measure of driving performance) from baseline, whole blood THC, 11-OH-THC, and THC-COOH levels (ng/mL), and subjective ratings of how “high” participants felt (0 = not at all, 100 = extremely). For this analysis of participants receiving active THC, males were matched to females on 1) estimated THC exposure (g) in the last 6 months (24M, 24F) or 2) whole blood THC concentrations immediately post-smoking (23M, 23F).

Results: When matched on THC exposure in the past 6 months (overall mean of 46 grams; $p = .99$), there were no sex differences in any cannabinoid/metabolite concentrations at baseline (all $p > .83$) or after cannabis administration (all $p > .72$). Nor were there differences in the change in CDS from pre-to-post-smoking ($p = .26$) or subjective “highness” ratings ($p = .53$). When matched on whole blood THC concentrations immediately after smoking (mean of 34 ng/mL for both sexes, $p = .99$), no differences were found in CDS change from pre-to-post smoking ($p = .81$), THC metabolite concentrations (all $p > .25$), or subjective