Case Report

IV Ketamine-Assisted Psychotherapy for PTSD and OCD: A Case Study

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Abstract

***Background*:** Post-traumatic stress disorder (PTSD) and obsessive-compulsive disorder (OCD) frequently co-occur and are often resistant to conventional treatments, particularly when comorbid.

***Objective*:** To evaluate the efficacy of intravenous ketamine-assisted psychotherapy (KAP) in a patient with comorbid PTSD and OCD.

Methods: A 20-year-old female with treatment-resistant PTSD and OCD underwent an 8-session IV KAP protocol, incorporating pre- and post-infusion psychotherapy and integration sessions. Symptom changes were measured using the Outcome Questionnaire-45 (OQ-45), PTSD Checklist for DSM-5 (PCL-5), and Yale-Brown Obsessive Compulsive Scale (Y-BOCS) at intake, post-treatment, and follow-up.

Results: Significant symptom reduction was observed. Y-BOCS scores decreased from 30 at intake to 18 post-treatment, and to 20 at an eight-month follow-up. PCL-5 scores dropped from 60 to 15 at follow-up. OQ-45 scores improved from 108 at intake to 65 post-treatment and 78 at follow-up.

Conclusion: IV ketamine-assisted psychotherapy may offer rapid and sustained symptom relief in patients with comorbid PTSD and OCD. This case supports further exploration of individualized KAP protocols for complex trauma and OCD presentations.

Keywords: Ketamine-assisted psychotherapy, OCD, PTSD, IV ketamine, case study.

INTRODUCTION

Post-traumatic stress disorder (PTSD) and obsessive-compulsive disorder (OCD) are debilitating conditions that are often resistant to conventional therapies. Healing through conventional therapies, including SSRI medications and cognitive exposure-based modalities, is especially challenging among individuals with comorbid PTSD and OCD. Research indicates that individuals with OCD who have a trauma history or who additionally meet PTSD criteria have poorer treatment results to exposure-based cognitive treatment. These trends call attention to the importance of understanding KAP's potential in the treatment of OCD, particularly when it is comorbid with other trauma disorders.

Recent studies have indicated that ketamine, an NMDA receptor antagonist, shows promise as a rapid-acting treatment for PTSD. Similarly, a retrospective clinical chart review conducted by Davis et al. (2021) evaluated the effects of ketamine-assisted psychotherapy (KAP) for patients with PTSD. The study highlighted KAP's potential as an effective intervention, demonstrating significant reductions in depression symptoms, notable improvements in PTSD severity, enhanced global functioning, and the facilitation of emotional breakthroughs that helped patients process and reframe traumatic memories.

Preliminary research studies suggest that KAP is efficacious in decreasing the severity of OCD symptoms. Beaglehole et al. (2024) conducted a double-blind, active-controlled crossover study, which evaluated the efficacy of ketamine administered intramuscularly (IM) in patients with severe, treatment-resistant OCD. This study administered two different doses of ketamine (0.5 mg/kg and

1.0 mg/kg) and compared them to fentanyl (50 mcg) as an active control. The results demonstrated substantial reductions in Y-BOCS scores, especially at the higher ketamine dose, with effects lasting up to one week—highlighting ketamine's rapid and short-term therapeutic potential for treatment-resistant OCD.

Ketamine therapy has been further found to decrease OCD severity among individuals whose OCD symptoms did not respond to SSRIs, although further research is needed to understand the potential of ketamine for treatment-resistant populations. This case study details the clinical course of IV ketamine-assisted psychotherapy to address co-presenting OCD and PTSD in a patient who has not responded to prior traditional medication and psychotherapy.

OBSESSIVE-COMPULSIVE DISORDER (OCD) AND POST-TRAUMATIC STRESS DISORDER (PTSD) PATHOGENESIS

OCD is a chronic mental health condition characterized by intrusive, distressing thoughts (obsessions) and repetitive behaviors or mental acts (compulsions) performed to reduce anxiety. Its pathogenesis involves a complex interplay of genetic, neurobiological, and environmental factors. Dysfunction in the cortico-striatal-thalamo-cortical (CTSC) circuitry, particularly hyperactivity in the orbitofrontal cortex, anterior cingulate cortex, and striatum, is thought to underlie OCD. Abnormalities in neurotransmitter systems, especially serotonin, dopamine, and glutamate, contribute to impaired cognitive and emotional processing. Genetic predisposition plays a significant role, as evidenced by family and twin studies, which suggest a heritable component. Environmental triggers, such as trauma, infections, or stress, can also influence the onset and severity of symptoms. Overall, OCD arises from dysregulated brain circuits, neurotransmitter imbalances, and genetic-environmental interactions, leading to persistent compulsions and obsessions that interfere with daily life.

PTSD develops due to exposure to traumatic events, leading to disruptions in the brain's stress response system. The condition is primarily driven by hyperactivity in the amygdala, which heightens fear responses and emotional processing, while the prefrontal cortex becomes impaired, reducing its ability to regulate fear and stress. Additionally, hippocampal dysfunction affects memory processing, making it difficult to contextualize threats. Dysregulation of the hypothalamic-adrenal (HPA) axis alters cortisol levels, contributing to an exaggerated stress response. Neurotransmitter imbalances involving serotonin, norepinephrine, and dopamine further impact mood and arousal. These combined neurobiological changes result in the hallmark symptoms of PTSD, including persistent hyperarousal, intrusive memories, avoidance behaviors, and emotional dysregulation.

When OCD coexists with PTSD, treatment outcomes can be more complex and challenging. The presence of OCD symptoms can interfere with trauma-focused therapies, such as prolonged exposure or cognitive reprocessing therapy, as compulsions may serve as avoidance mechanisms that hinder emotional engagement with traumatic memories.

Additionally, PTSD-related distress can exacerbate OCD symptoms, making standard OCD treatments like exposure and response prevention more difficult. Patients with comorbid PTSD and OCD often require an integrated treatment approach that addresses both conditions simultaneously, balancing exposure to traumatic memories while managing compulsive behaviors.

PATIENT INFORMATION

- Age/Gender: 20-year-old female
- Diagnosis: OCD, PTSD
- History: The patient reported a history of a restrictive eating disorder during early adolescence, which she reported was related to desires for control within her environment rather than body image insecurity. She reported a history of trauma involving fears for her safety and forcible physical handling during an inpatient psychiatric hospitalization at age 13. The patient reported that she initially received an OCD diagnosis during her adolescence and continues to experience obsessive and compulsive patterns. She described that her OCD has presented in the past with magical thinking regarding her responsibility in national events, but she reported good insight into the inaccuracies of these intrusive thoughts. Her previous treatments included various psychotherapies and medications, including SSRIs, SNRIs, and benzodiazepines, with limited success. The patient did not report ever going through Exposure Response Prevention (ERP) psychotherapy.
- Current Symptoms: Frequent intrusive thoughts of impending harm or disaster, time-consuming compulsions regarding counting in a variety of daily activities, restrictive and invasive rituals regarding performance of academic and daily responsibilities, night terrors regarding past traumatic events, hypervigilance related to internal body cues, sporadic panic attacks, socially avoidant behaviors, avoidance of medical settings, and severe anxiety.

Medication History

Past Psychiatric Medications

The patient has trialed numerous psychotropic medications prior to engaging in ketamine-assisted psychotherapy, including:

- Tricyclic Antidepressants: Doxepin, Norpramin (desipramine)
- Selective Serotonin Reuptake Inhibitors (SSRIs): Prozac (fluoxetine), Zoloft (sertraline), Lexapro (escitalopram)
- Serotonin-Norepinephrine Reuptake Inhibitors (SNRIs): Effexor (venlafaxine), Pristiq (desvenlafaxine)
- Atypical Antidepressants: Wellbutrin (bupropion), Wellbutrin XL (bupropion), Trintellix (vortioxetine), Auvelity (bupropion/dextromethorphan)
- Mood Stabilizers: Lithium
- Atypical Antipsychotics: Clozaril (clozapine), Seroquel (quetiapine), Vraylar (cariprazine), Abilify (aripiprazole)
- Anxiolytics: Valium (diazepam), Ativan (lorazepam), Xanax (alprazolam), Buspar (buspirone)
- Sedative-Hypnotics: Sonata (zaleplon), Desyrel (trazodone)
- Stimulants: Vyvanse (lisdexamfetamine

These medications were trialed with varying durations, but provided limited or unsustained symptom relief. The patient was considered to have treatment-resistant symptoms prior to beginning KAP

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Current Medications (at time of treatment)

- Adderall XR – 20mg once daily
- Pristiq (desvenlafaxine) – 100mg once daily
- Propranolol – 20mg twice daily as needed

Diagnostic Clarification and Rule-Out of Exclusionary Conditions

During the initial clinical evaluation and intake process, the patient met full DSM-5 criteria for Obsessive-Compulsive Disorder (OCD), including the presence of:

- *Recurrent, persistent, and intrusive thoughts experienced as distressing (obsessions)*
- *Repetitive behaviors aimed at reducing anxiety (compulsions)*
- *Marked distress and interference with academic, social, and daily functioning due to these symptoms*
- *The patient exhibited good insight, recognizing that the obsessive beliefs were unlikely to be true.*

Additionally, the patient met DSM-5 criteria for Post-Traumatic Stress Disorder (PTSD) based on trauma history, intrusive re-experiencing symptoms, avoidance behaviors, hyperarousal, and negative alterations in cognition and mood, corroborated by her initial PCL-5 score of 60 and clinical interview.

Importantly, there was no clinical evidence of past or current hypomania or mania, and the patient denied any experiences of elevated mood, inflated self-esteem, decreased need for sleep, pressured speech, or impulsivity that would be indicative of a bipolar spectrum disorder. The patient also denied any history of psychosis. Clinical interviews and history review revealed no symptoms of hallucinations, delusions, disorganized thinking, or loss of reality testing. Thus, no psychotic or bipolar features were evident that would contraindicate ketamine administration.

METHODS

Assessment Tools

- *Baseline:* Outcome Questionnaire-45 (OQ-45), PTSD Checklist for DSM-5 (PCL-5), and the Yale-Brown Obsessive Compulsive Scale (Y-BOCS) were administered at intake. Patient scored a baseline OQ-45 score of 108, indicating distress significantly above the clinical significance cut-off score. Patient's baseline PCL-5 score was 60, indicating she met the total cut-off score for probable PTSD, and her item response patterns met criteria for a provisional diagnosis of PTSD. Client's baseline Y-BOCS score was 30, indicating she met criteria for severe OCD based on assessment scoring guidelines. The patient's verbal report during the therapy intake session supported the diagnosis of PTSD and OCD.
- *Follow-Up:* Symptom change was assessed using the OQ.45, Y-BOCS, and PCL-5 at multiple follow-up intervals. The OQ-45 was administered before each session and again at 8 months. The Y-BOCS was administered at treatment conclusion, 3.5 months post-treatment, and 8 months post-treatment. The PCL-5 was not obtained immediately after treatment but was collected at 3.5 months and 8 months post-treatment, providing important information on PTSD symptom trajectory despite the missing immediate post-treatment data.

Treatment Protocol

- Preparation: The patient underwent a comprehensive psychiatric evaluation and physical examination. Informed consent was obtained.
- Ketamine Administration: IV ketamine was administered at a dose of 0.5-0.9 mg/kg over 30-40 minutes. The patient received six weekly KAP infusion sessions, followed by a tapering schedule with two-week intervals between sessions six and seven, and again between sessions seven and eight. The patient completed a total of eight KAP sessions.

- Psychotherapy Sessions: Integrative psychotherapy sessions were conducted immediately before and after each ketamine infusion, focusing on processing traumatic memories, the client's urge for control within her obsessive and compulsive symptoms, and anxious thoughts regarding current and past experiences. The patient additionally completed seven separate virtual psychotherapy integration sessions between infusion sessions. She completed a total of seven integration sessions alongside her eight KAP infusion sessions. The first integration session took place three days after her initial KAP session. She then had two integration sessions, each occurring two days after her fifth and sixth infusion sessions. Another integration session followed one day after her seventh infusion. She also had an integration session during the week between her seventh and eighth infusions. Finally, she had two more integration sessions after her eighth infusion session.

RESULTS

Symptom Improvement

- KAP session 1-2: Minor increase in intensity of anxious thoughts and distress in her urges for control over thoughts and actions
- KAP session 3-4: Insight into the impact of past experiences on her current drive for control over her thoughts and avoidance behaviors, decrease in the intensity of anxious thoughts, and increased ability to release intrusive thoughts and feel present
- KAP session 5-6: Continued reduction in overall anxious distress and increased self-understanding regarding her patterns of avoidance and vigilance.
- KAP session 6: Marked reduction in overall distress as indicated on OQ.45; decreased avoidance behaviors and increased compulsive response prevention, self-reported realization that intrusive anxious thoughts will not come true
- KAP session 7: Moderate increase in anxiety levels, patient was recovering from a week of having COVID-19 with significant fever and immobility
- KAP session 8: Further drop in overall distress and anxiety levels, reduced urgency of intrusive anxious thoughts, significant decrease in avoidant behaviors, reduced reported urges for control over hyper-specific details of decision making

Objective Outcomes:

- **OQ-45**: 108 at intake, 65 at conclusion of treatment (near subclinical levels of distress), 78 at 8-month follow-up.
- **Y-BOCS**: 30 at intake, 18 at conclusion of treatment (mild to moderate OCD, marked reduction from severe at intake), 17 at 3.5-month follow-up, 20 at 8-month follow-up.
  PCL-5: 60 at intake, not collected at conclusion of treatment, 26 at 3.5-month follow-up (below cut-off for probable PTSD diagnosis), 15 at 8-month follow-up.

Measure	Intake	End of Treatment	3.5 Month Follow-up	8 Month Follow-up
OQ-45	108	65	-	78
PLC-5	60	-	26	15
Y-BOCS	30	18	17	20

Patient Experience

The patient reported experiencing significant anxiety and intrusive thoughts reduction through the KAP process. She noted the importance of the insight she gained into the connection between past traumatic experiences and her current intrusive urges for control. She expressed finding the experience of releasing control during KAP infusions challenging, but appreciated how facing this challenge helped her. It reduced the urgency of her mental and behavioral compulsions and boosted her confidence in managing these urges in the future. She also noticed improvements in emotion regulation and felt more confident in her ability to respond to trauma reminders moving forward. From the conclusion of treatment to the eight-month follow-up, the patient engaged in several talk therapy sessions with an outside clinician, but did not maintain treatment with them.

DISCUSSION

Ketamine-Assisted Psychotherapy Dosing Approach: Exposure-Informed Titration in OCD In this case, the patient presented with treatment-resistant OCD, characterized by chronic intrusive thoughts, a high need for control, and significant anxiety in response to uncertainty that was unresponsive to both medication management and traditional psychotherapy. Recognizing that patients with OCD often experience distress in response to altered states of consciousness - particularly those involving a perceived loss of control, an exposure therapy-informed titration strategy was employed during KAP.

The objective was to engage her in a mild to moderate altered state, commonly referred to as the peri-dissociative window, where defenses loosen and internal exploration is facilitated, yet the patient remains verbally engaged and emotionally anchored enough to participate in the therapeutic process. This level of consciousness allows for the emergence of novel insights, emotional softening, and an enhanced capacity for reflective awareness, all while preserving the patient's sense of safety and agency.

The ketamine was administered in a two-phase approach. The first phase involved a conservative loading dose, carefully calibrated to allow the patient to experience a subtle shift in awareness without becoming overwhelmed. This initial dose served as an experiential exposure to the feeling of "letting go" of control, a state that is often distressing for individuals with OCD. Rather than forcing dissociation, the process prioritized containment, co-regulation, and the therapeutic alliance. The second phase of the infusion process followed the patient's internal pacing, allowing the client to remain in the peri-dissociative window for the remainder of the infusion, not to exceed 40 minutes. This modality of administering ketamine facilitated the development of cognitive flexibility and the ability to experience uncertainty without compulsive avoidance or rigid control. Framing each dosing experience as an opportunity to practice surrender and openness, and reinforcing the patient's agency in managing her own experience, proved essential in maintaining engagement and supporting the long-term efficacy of KAP in this individual with OCD. A registered nurse and licensed professional counselor remained by the patient's side throughout the duration of the session.

This case illustrates the potential efficacy of IV ketamine-assisted psychotherapy in treating OCD, particularly OCD presenting alongside PTSD. The rapid symptom relief and reduction in intrusive anxious thoughts, urges for control, and avoidance behaviors in this patient align with existing literature on ketamine's therapeutic effects. The combination of ketamine with psychotherapy appears to enhance therapeutic outcomes by leveraging ketamine's ability to disrupt maladaptive

neural circuits and facilitate emotional processing. Over the long term, this approach may contribute to sustained improvements in emotional regulation, resilience, and symptom reduction, as ketamine's neuroplastic effects help reinforce positive therapeutic gains.

Clinical Implication

This case highlights how exposure-informed titration of ketamine, delivered intravenously in a trauma-informed therapeutic framework, can reduce OCD and PTSD symptoms in treatment-resistant patients. It underscores the importance of titrated dosing and integration therapy in optimizing outcomes with KAP.

CONCLUSION

IV ketamine-assisted psychotherapy appears to be a viable treatment option for patients with OCD and PTSD, offering rapid and substantial symptom relief. Further research is warranted to establish standardized protocols and long-term efficacy.

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