

Just Say Yes: The Use of Ketamine Infusion Therapy for Treatment-Resistant Depression

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Imagine being diagnosed with depression and being prescribed medications to take daily in the hopes that the depression would improve, only never to feel as though the depression is improving. This is the reality for some clients diagnosed with depression. They have tried different medications to no avail and may feel hopeless about their prognosis. This hopelessness and failure of antidepressant medication therapy can lead to another diagnosis: treatment-resistant depression (TRD). However, there exists an emerging treatment to alleviate the symptoms associated with TRD: ketamine-infusion therapy (KIT). Evidence-based practice is crucial for providing optimal client care in mental health nursing. KIT is an evidence-based practice that mental health and advanced practice nurses can champion to benefit clients diagnosed with TRD.

To be diagnosed with TRD, the client must not have had an adequate response to treatment given enough time and using at least two antidepressant medications; 30 percent of clients who are diagnosed with major depressive disorder (MDD) have TRD (McIntyre et al., 2023). MDD “has a lifetime prevalence of about 5 to 17 percent, with the average being 12 percent” (Bains & Abdijadid, 2023). These statistical data are both shocking and worrisome. Given that depression is a mental illness that affects most people at some point in their lives, there is a chance that traditional medication therapy can fail a significant portion of those diagnosed with depression. Depressed clients also have higher morbidity, mortality, and increased healthcare costs due to the mental and physical deterioration associated with depression. Nurses use evidence-based practice through standards of care, studies, and professional organizations' position statements to provide optimal client-centered care. Given the existing strain of healthcare resources and personnel, nurses must understand the prevalence and

impact of depression on client-centered care. Nurses must establish therapeutic rapport and allow the clients to express their feelings and concerns in a safe, nonjudgmental environment. The nurse's use of therapeutic communication is the first-line treatment before the initiation of care plans. Without adequate rapport, support, and trust from the client, the care stops progressing, and the nurse-client relationship ceases. Client-centered care enables the client to have a meaningful connection to their nurse and allows a focused approach to treating TRD, especially with ketamine.

Ketamine was initially developed and used as an anesthetic in surgery. Recent developments in research and FDA approval have allowed ketamine to be used as a rapid-acting antidepressant due to its nature as a noncompetitive *N*-methyl-D-aspartate (NMDA) receptor antagonist, which blocks the neurotransmitter glutamate that is involved in depression (UpToDate Inc., 2024). Given that depression consists of the alteration of neurotransmitters, among other disruptions to the neuroanatomy, this is why medication therapy includes selective serotonin reuptake inhibitors (SSRIs), selective norepinephrine reuptake inhibitors (SNRIs), tricyclic antidepressants, and monoamine oxidase inhibitors (MAOIs) among other medications. Each of these medications has a mechanism of action that affects a specific neurotransmitter, such as serotonin, norepinephrine, GABA, and glutamate, that impacts the brain's synaptic activity and hopefully produces a therapeutic effect related to depression symptom relief.

However, for clients diagnosed with TRD, two or more of these medication classes have been used with no adequate relief of symptoms. Ketamine, on the other hand, offers another solution for altering neurotransmitters to produce a therapeutic effect. As an infusion, ketamine can rapidly improve mood, even after one treatment session; since ketamine's duration of action is short-lived at around one to three days, infusions may need to be performed regularly over

weeks and months to maintain its therapeutic effect (Chiappetta, 2023, p. 229). Some side effects of KIT include “increased blood pressure and heart rate and a feeling of dissociation” (Chiappetta, 2023, p. 229). KIT offers clients diagnosed with TRD the opportunity to try a novel solution for symptom relief. Ketamine’s action on NMDA and glutamate provides a more effective and faster elevation in mood for clients with TRD compared to traditional antidepressants: SSRIs, SNRIs, tricyclic antidepressants, and MAOIs, among other medications. Mental health nurses must understand the factors, neurological and psychiatric, associated with TRD to better care for clients with this diagnosis. The mechanism of action, neurotransmitter-receptor relationship, side effects, and pharmacokinetics regarding ketamine are important educational points for appropriate client understanding and teach-back. The psychosocial support nurses provide helps clients integrate their emotions and ketamine experience into their overall care plan. Furthermore, KIT has been studied in systematic reviews and meta-analyses regarding its evidence-based practice efficacy and effectiveness.

In a systematic review and meta-analysis published in the *Journal of Psychiatric Research*, KIT was shown to be significantly effective among data from over 2500 clients; periods of infusions over the short-term and long-term showed no adverse outcomes, suggesting that clients with TRD have options regarding treatment periods (Alnefeesi et al., 2022). KIT is a revolutionary treatment option for clients with TRD. Since many other clients involved in the study experienced a temporary relief of symptoms, this data could be extrapolated for broader spread use. Mental health nurses can champion the effectiveness of KIT through education and community outreach programs. These programs can empower those who may feel hopeless or feel that there are no more places or treatments to try. The impact on the TRD client population would be significant and allow mental health nurses to incorporate ketamine clinics and

observations into their practice. Clients would benefit from being involved in care centered around them and precisely tailored to alleviate symptoms associated with TRD. Another systematic review, published in *Lancet Psychiatry*, examines the efficacy, safety, and tolerability of KIT maintenance.

Using ketamine for long-term TRD therapy has shown uncommon adverse reactions, efficacy relating to sustained therapy, and effectiveness since there are no other reasonable alternatives (Smith-Apeldoorn et al., 2022). KIT is an effective evidence-based practice that mental health nurses can utilize when providing client-centered care. Mental health nurses can appropriately and safely monitor the client while they receive ketamine infusions. Clients benefit from their interactions with mental health nurses throughout the process and receive comprehensive education while receiving infusions based on their individual needs and clinical presentations. Advanced practice nurses, such as psychiatric mental health nurse practitioners (PMHNPs) and certified registered nurse anesthetists (CRNAs), can also impact client care through advanced diagnostic and procedural abilities.

PMHNPs have advanced diagnostic skills and prescriptive authority to provide comprehensive care for clients diagnosed with TRD. CRNAs have the procedural and technical knowledge of initiating, maintaining, and discontinuing KIT. Together, these advanced practice nurses can collaborate and provide client-centered care. The American Psychiatric Nurses Association (APNA) and the American Association of Nurse Anesthesiology (AANA) have collaborated to release a position statement regarding the use of KIT for psychiatric disorders. In this position statement, both organizations seek to promote mental health well-being through the “assessment, diagnosis, and treatment” of TRD, among other psychiatric disorders; PMHNPs diagnose clients and prescribe KIT; CRNAs collaborate with PMHNPs to conduct pre-infusion

assessments, safely administer KIT, and conduct post-infusion assessments; and mental health nurses support the client throughout the infusion and follow up with clients after the infusion (American Association of Nurse Anesthesiology & American Psychiatric Nurses Association, 2023). The interdisciplinary approach with mental health and advanced practice nurses provides superior benefits to the client. The team utilizes their unique training to deliver safe, optimal care. TRD can undermine a client's feelings about their current state of life and make it challenging to view alternatives as opportunities due to the inadequacy of previous medications or therapies. Mental health nurses provide education, advocacy, and support for a healthy mind and body. The advanced practice nurses collaborate to prescribe a client-centered KIT treatment plan to maximize the benefits, well-being, and symptom management of TRD.

Conclusion

Ultimately, there is hope for clients diagnosed with TRD. The prevalence of TRD among clients diagnosed with MDD is staggering. However, there is evidence-based practice in using KIT through pharmacology, systematic reviews and meta-analyses, and a joint position statement between the APNA and AANA, two professional nursing organizations. KIT provides clients the opportunity to receive a unique medication that acts on NMDA and glutamate, neurotransmitters associated with depression, instead of using traditional antidepressants that are inadequate for TRD. Through many trials and studies, ketamine was shown as efficacious, able to be used long-term, and therapeutic through rapid symptom alleviation and mood elevation. Mental health and advanced practice nurses are essential in caring for the client diagnosed with TRD. Nurses contribute to KIT as an evidence-based practice that benefits clients through education and community outreach programs, diagnosis and prescription, and initiation, maintenance, and discontinuation of KIT. Ultimately, evidence-based practice is an impactful tool nurses use to

provide client-centered care safely. As research into KIT for TRD evolves, nurses must remain vigilant to the standards of care and integrate them accordingly into their practice. Embracing evidence-based practice in KIT is allowing nurses to play a pivotal role in the future of mental health treatment and improving the lives of clients with TRD.

References

- Alnefeesi, Y., Chen-Li, D., Krane, E., Jawad, M. Y., Rodrigues, N. B., Ceban, F., Di Vincenzo, J. D., Meshkat, S., Ho, R. C. M., Gill, H., Teopiz, K. M., Cao, B., Lee, Y., McIntyre, R. S., & Rosenblat, J. D. (2022). Real-world effectiveness of ketamine in treatment-resistant depression: A systematic review & meta-analysis. *Journal of Psychiatric Research*, 151, 693–709. <https://doi.org/10.1016/j.jpsychires.2022.04.037>
- American Association of Nurse Anesthesiology & American Psychiatric Nurses Association. (2023). AANA and APNA joint position statement on ketamine infusion therapy for psychiatric disorders. <https://issuu.com/aanapublishing/docs/apna-aana-joint-statement-on-ketamine?fr=sY2VIZjU2NDAxMjU>
- Bains, N. & Abdijadid, S. (2023). Major depressive disorder. In *StatPearls* (Ed.), StatPearls Publishing. <https://www.ncbi.nlm.nih.gov/books/NBK559078/>
- Chiappetta, L. (2023). Mood disorders: Depression. In C. D. Fosbre (Ed.), *Vancouver's essentials of psychiatric mental health nursing: A communication approach to evidence-based care* (5th ed., p. 229). Elsevier.
- McIntyre, R. S., Alsuwaidan, M., Baune, B. T., Berk, M., Demyttenaere, K., Goldberg, J. F., Gorwood, P., Ho, R., Kasper, S., Kennedy, S. H., Ly-Uson, J., Mansur, R. B., McAllister-Williams, R. H., Murrough, J. W., Nemeroff, C. B., Nierenberg, A. A., Rosenblat, J. D., Sanacora, G., Schatzberg, A. F., . . . Maj, M. (2023). Treatment-resistant depression: Definition, prevalence, detection, management, and investigational interventions. *World Psychiatry*, 22(3), 394–412. <https://doi.org/10.1002/wps.21120>
- Smith-Apeldoorn, S. Y., Veraart, J. K., Spijker, J., Kamphuis, J., & Schoevers, R. A. (2022). Maintenance ketamine treatment for depression: A systematic review of efficacy, safety,

and tolerability. *Lancet Psychiatry*, 9(11), 907–921. [https://doi.org/10.1016/S2215-0366\(22\)00317-0](https://doi.org/10.1016/S2215-0366(22)00317-0)

UpToDate Inc. (2024). Ketamine [Drug Information]. *Lexi-Drugs, UpToDate Lexidrug*.

Retrieved November 2, 2024, from

https://online.lexi.com/lco/action/doc/retrieve/docid/patch_f/7135?cesid=4l3Uwg96Yg6&searchUrl=%2F%2Flco%2Faction%2Fsearch%3Fq%3Dketamine%26t%3Dname%26acs%3Dtrue%26acq%3Dketamine