

# The Pros and Cons of Ketamine Infusion and Electroconvulsive Therapy for Depression in the Veteran Population: A Literature Review

Raven Moody

Eastern New Mexico University

\*Corresponding author: Raven Moody, Eastern New Mexico University.

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## Abstract

Ketamine infusion therapy, esketamine, and Electroconvulsive therapy (ECT) are ways that aim at helping Veterans who suffer from treatment-resistant depression (TRD) suicidal ideation, and post-traumatic stress disorder (PTSD). Thus, both therapies have been shown to rapidly reduce symptoms and give these individuals that have not reacted to antidepressant medications hope. However, there is ongoing research about the safety and effectiveness of both therapies. This literature review will aim to discuss and compare alternative psychotherapies to antidepressants for treating mental health disorders in veterans.

**Keywords:** Meditation, Practitioners, Non-Practitioners, Emotional Stability

## Introduction

According to Corrigan and Pickering (2019), depression is the third most common reason people cannot concentrate, perform at their jobs, or perform daily tasks. Depression is different from usual mood swings or occasional episodes of sadness because it affects about 350 million people around the world and causes them much distress [1]. Characteristics of depression are described as having a depressed mood, thoughts of suicide, feelings of sadness, guilt, decreased motivation and energy, and anxiety [1]. Consequently, if proper treatment is not received, depression in any form may worsen, last for an extended period, and lead to death.

According to research, some veterans have reported that when combating depression, the efficacy of prescribed antidepressant medications has become less effective. However, this could be the consequence of several factors, including difficulty getting access to the drug, resistance to taking it because of adverse effects, or the length of time it takes for the medication to take action in the body. According to about 30% of individuals do not experience remission despite numerous tried-and-true treatments that involve various drugs or therapies [2]. Depression, a prevalent mental health disorder impacting countless individuals worldwide, continues to pose a challenge even with advances in conventional treatments such as antidepressants, electroconvulsive therapy (ECT), and ketamine therapy [2]. However, ketamine infusion therapy and ECT provides hope to the veteran population.

## What is Ketamine and Esketamine?

Ketamine, a medication that has attracted much interest because of its possible beneficial effects, is an agonizing of glutamate

receptors. According to there is some proof that it can help treat depression [2]. Ketamine induces a state of dissociation, wherein individuals experience a detachment from their body and physical surroundings [3]. Initially developed as an anesthetic, ketamine has found its off-label uses in treating conditions like depression, chronic pain, and suicidal ideation. What makes ketamine and esketamine so unique from traditional antidepressants is their mechanism of action, which targets a “chemical messenger” that affects the brain and can directly interact with the benefits of counseling, making it a powerful pair that improves treatment for people who want to heal and recover from deep depression [1].

S-enantiomer Spravato only contains the molecule of esketamine is a variant of ketamine. The US Food and Drug Administration (FDA) approved this nasal spray form of esketamine to treat individuals with resistant depression (Center for Drug Evaluation and Research, 2023). TRD is a depressed episode that does not get better after at least two trials of antidepressants at the proper doses and for the right amount of time, according to the Center for Drug Evaluation and Research (2023). The FDA warning says that esketamine is recommended for use in TRD along with antidepressant treatment (Center for Drug Evaluation and Research, 2023).

## The Pros of Ketamine and Esketamine

Numerous studies have indicated the significant benefits of ketamine infusion therapy and esketamine for depression, with many veteran patients experiencing rapid improvements in their symptoms. Patient experiences with ketamine infusion therapy

vary, with some reporting remarkable improvements in mood and functionality. Because each patient is different, individual reactions and the length of time that positive benefits last may vary from patient to patient. Research has also shown remarkable findings regarding the rapid relief ketamine offers in cases of treatment-resistant depression, making it a promising alternative for patients who have not responded to standard treatments [3]. Interestingly, ketamine infusion therapy and ketamine have the added benefit of being more accessible and convenient for certain veteran patients due to their outpatient nature [4]. While ECT can also be performed in an outpatient setting, ketamine provides an alternative option that may better suit the needs of some individuals, such as a longer recovery time and a less invasive procedure.

### The Cons of Ketamine and Esketamine

The potential risks and side effects associated with ketamine infusion therapy and esketamine should be acknowledged, including psychological discomfort during infusion, the risk of abuse and addiction, and its impact on the cardiovascular and respiratory systems. For example, ketamine infusion therapy raises blood pressure, heart rate, and temperature and is known to cause respiratory depression, drowsiness, and blurred vision [4]. Ensuring these patients thoroughly understand these benefits and risks is vital to shape clinical practice and optimize patient outcomes. While ketamine's rapid action holds significant advantages, concerns revolving around its safety and efficacy persist. Reports indicate potential side effects like dissociation, transient increases in blood pressure, and psychotomimetic effects during and immediately after administration [4].

It is necessary to examine research and the outcomes as reported by patients to gain a comprehensive understanding of the efficacy of ECT, ketamine, and ketamine therapy. However, this involves examining the individual experiences during and after treatment and documenting the pros and cons of treatments. Although personal experiences may differ, these insights are of great value in personalizing treatment strategies and maximizing the quality of patient care.

### Review of the Literature

**Comparison of Electroconvulsive Therapy (ECT) and Ketamine**  
It is essential to understand the differences between ketamine infusion treatment and ECT. One must know, how they are prepared, and how effective these treatment modalities are for patients. Ketamine infusion treatment involves giving ketamine through a peripheral IV catheter and is usually done on an outpatient basis. However, this approach has the benefit of starting to work rapidly, like ECT, with a fast onset. With ECT, there appears to be some temporary memory loss. However, it is essential to note that ECT does not require a peripheral IV placement, and patients typically do not receive medication from nurses beforehand. Instead, ECT patients are sent to the operating room and prepared for the procedure under general anesthesia.

Ketamine infusion treatment and esketamine, on the other hand, are less invasive. Nevertheless, it is essential to know that ketamine effects only last a short time and need to be repeated for long-lasting relief. Still, any short-term memory loss that may

occur while using ketamine is usually only temporary and goes away quickly after the infusion [1]. On the other hand, ECT involves causing controlled seizures under anesthesia in a hospital. While ECT is known to be effective, it can affect memory and thinking [3]. In addition to short-term memory loss, general anesthesia is needed for ECT, and it has the same risks as other types of anesthesia, like those used for minor surgeries, such as possible nausea, vomiting, headache, fatigue, or confusion.

Nonetheless, this is something to consider, especially for patients wanting lasting effects after treatment. Interestingly, ketamine therapy might be more accessible for some patients because it is done without going to the operating room, unlike ECT. Ketamine infusion therapy involves a nurse initiating a peripheral intravenous (IV) line, in which the ketamine infusion is delivered, and the patient is discharged shortly after. Esketamine involves the nurse handing the patient nasal spray, and with the provider present, the patient will spray each nostril. Patients undergoing ketamine therapy should experience wakefulness throughout the procedure, and unlike electroconvulsive therapy (ECT), it generally should not result in memory impairment [5].

### Conclusion

There are many risks and benefits to ketamine therapy and ECT. Therefore, it is essential to consider the side effects of the two treatment modalities. According to both ketamine infusion therapy and ECT are proper treatment methods for veterans who suffer from TRD, PTSD, and suicidal ideation [4]. Furthermore, it is necessary to seek medical advice from a professional when searching for a suitable treatment for depression. When deciding between ketamine and ECT, it is a must for the veteran population to do research comparing the pros and cons and consulting with a physician who will guide individuals based on their circumstances.

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