



In individuals diagnosed with moderate to severe depression, does the use of ketamine provide equal or greater relief from symptoms when compared to the use of a placebo treatment?

Austin Strosser, MMS (c)
Elizabeth Masten MS, PA-C
Department of Medical Science

Abstract

Depression is a disease that effects millions of patients and has a variety of symptoms. It is primarily defined by depressed mood and anhedonia. The first line treatment for depression is SSRI medications. These medications have several side effects and are not effective for a large number of patients. Therefore, this study was done to review ketamine as a new treatment option for depression and see how it compares to a placebo.

Introduction

Major Depressive Disorder(MDD)

Overview:

- Affects 16 million people annually
- Over 30,000 suicide deaths annually in the US alone

Symptoms:

- Requires a 2 week period of either anhedonia or depressive mood
- Can also present with: fatigue, insomnia, hypersomnia, feelings of worthlessness, suicidal thoughts

Treatment:

- Firstline treatment is with SSRI
- Other treatments include SNRI, TCA, and MAO inhibitors

Methods

Literature Search

- Performed in November 2018
- Performed on PubMed and Ebscohost
- Keywords were Ketamine and Depression
- Only included randomized control studies
- Papers had to be published within the past 5 years

Results

- **Lally N, Nugent, Luckenbaugh Et al.**
❖ RCT of 36 patients comparing Ketamine to placebo (NSS)
- **Price RB, Iosifescu DV, Murrough JW, et al.**
❖ RCT of 57 patients comparing Ketamine to Placebo (Midazolam)
- **Murrough JW, Iosifescu DV, Chang LC, et al**
❖ RCT of 72 patients comparing Ketamine to Placebo (Midazolam)
- **Lapidus KA, Levitch CF, Perez AM, et al**
❖ RCT of 20 patients comparing Ketamine to Placebo (NSS)
- **Fan W, Yang H, Sun Y, et al**
❖ RCT of 37 patients comparing Ketamine to Placebo (Midazolam)
- **Lenze EJ, Farber NB, Kharasch E, et al**
❖ RCT of 20 patients comparing Ketamine treatment duration

Study	Reduction in MADRS Score	Reduction in QIDS-SR	Duration of treatment effect	Reduction of additional symptoms
Lally N, Nugent, Luckenbaugh Et al.	S	NA	S	S
Price RB, Iosifescu DV, Murrough JW, et al.	S	S	NA	S
Murrough JW, Iosifescu DV, Chang LC, et al	S	S	S	S
Lapidus KA, Levitch CF, Perez AM, et al	S	S	NS	NA
Fan W, Yang H, Sun Y, et al	S	NA	S at day 3 NS at day 7	NA
Lenze EJ, Farber NB, Kharasch E, et al	NS	NA	NS	NS
Vande Voort JL, Ballard ED, Luckenbaugh DA, et al	NS	NA	NA	S

S = Statistically Significant, NS = Not Significant, NA = Results Not Available

Discussion

All of the studies that compared ketamine specifically to a placebo showed a statistically significant improvement in the MADRS score

Important take a ways:

- Of the 5 studies that compared ketamine to placebo, 3 used the QIDS-SR score in addition to the MADRS score, all of which showed a significant reduction with ketamine
- The two studies that did not show statistical significance still showed an improvement on depressive symptoms, they did not however compare to placebo

Limitations:

- The largest sample size was only 72 patients
- Most studies focus on severe treatment resistant depression

Conclusion

Over all the research performed for this study showed extremely promising results. All of the studies that compared placebo and ketamine showed statistically significant decrease in depressive symptoms based on MADRS and QIDS-RS scores. Larger studies with more participants are needed to fully understand the effect that ketamine has on patients, but for now it looks promising as a new treatment for depression

References

1. <https://www.cdc.gov/nchs/fastats/depression.htm>. Accessed April 10, 2019.
2. Nock MK, Borges G, Bromet EJ, et al. Suicide and suicidal behavior. *Epidemiol Rev.* 2008; 30:133–154.
3. Depression: How effective are antidepressants? InformedHealth.org [Internet]. <https://www.ncbi.nlm.nih.gov/books/NBK361016/>. Published January 12, 2017. Accessed April 11, 2019.