



Supplementary Material

Article Title: Acute and Longer-Term Outcomes Using Ketamine as a Clinical Treatment at the Yale Psychiatric Hospital

Author(s): Samuel T. Wilkinson, MD; Rachel B. Katz, MD; Mesut Toprak, MD; Ryan Webler, BA; Robert B. Ostroff, MD; and Gerard Sanacora, MD, PhD

DOI Number: <https://doi.org/10.4088/JCP.17m11731>

List of Supplementary Material for the article

1. [Appendix 1](#) Methods
2. [Appendix 2](#) Consent Form: "Off-label use of ketamine for the Treatment of a Major Depressive Episode"
3. [Table 1](#) Concomitant medications during acute course
4. [Table 2](#) Concomitant medications for longer-term patients

Disclaimer

This Supplementary Material has been provided by the author(s) as an enhancement to the published article. It has been approved by peer review; however, it has undergone neither editing nor formatting by in-house editorial staff. The material is presented in the manner supplied by the author.

Appendix 1

Methods

Ketamine Dosing

Ketamine dosing is 0.5mg/kg. If BMI > 30, we initially use adjusted body weight for this calculation, which is calculated as follows:

Adjusted body weight = ideal body weight + 40% * (actual body weight – ideal body weight)

Ideal body weight is calculated according to the formula below:

For males: 50kg + (2.3 kg*inches for every inch in height above 5 feet)

For females: 45.5kg + (2.3 kg*inches for every inch in height above 5 feet)

For individuals who are < 5 feet in height, use actual weight unless weight is > 50kg for men or > 45.5kg for women; in this case, we use 50kg for men and 45.5kg for women as ideal body weight.

Appendix 2

Consent Form: “Off-label use of ketamine for the Treatment of a Major Depressive Episode”

I authorize Dr. _____ and assistants of his/her choice to administer intravenous (IV) ketamine to _____ (name of patient) and to continue this treatment at such intervals, as they may deem advisable.

I understand the US Food and Drug Administration have not approved ketamine for the treatment of depression. Ketamine is being administered “off-label” based on several small clinical trials that suggest the medication has rapid acting antidepressant effects in some patients that have not responded to standard antidepressant treatments. I also understand that the longer-term benefits of the treatments on depression have not yet been evaluated. I have discussed the above with my physician and understand these issues to my satisfaction.

I understand that before IV ketamine is given, there will be a complete physical examination, which may include an electrocardiogram, and chest x-rays if indicated. I understand that there may be cardiologic, neurologic, or anesthesiology consults requested if indicated.

I understand that there are acute risks of ketamine administration.

- I may have a dissociative experience, which may consist of a distorted sense of time, a feeling I am detached from own body, or an altered sense of perception (hearing, vision, etc.) that may be uncomfortable and cause some anxiety. The infusion may be stopped if there are any concerns about my safety.
- I may experience changes in my blood pressure or heart rate. Although it is highly unlikely, these physiological effects could cause serious unwanted consequences including stroke and death. The occurrence of significantly increased blood pressure and/or heart rate could necessitate stopping the ketamine infusion as a safety concern. To prevent this during future treatments, I may be given a low-dose of oral blood pressure medication.

I understand that during the infusion and for the period during which I am regaining a normal mental status, I will be closely observed.

I understand that heavy and chronic ketamine use may cause unwanted side effects, including impaired cognition, inflammation of the bladder, delusions, and/or addiction/dependence. I also understand that moderate quantities of ketamine, administered in a time-limited fashion, may have side effects that are currently unknown.

I understand that I will not be able to drive for 24 hours after completing a ketamine treatment, and I will need to have a responsible adult accompany me to home on each treatment day.

Alternative methods of treatment have been explained to me and I understand them. I have been given the opportunity to ask about potential risks and benefits and alternative treatment options, and my concerns have been answered to my satisfaction. I understand my decision to agree to ketamine is made on a voluntary basis, and that I may withdraw my consent at any time.

Signed:

Physician's Note

I have informed _____ (name of patient, parent or guardian) of the purpose, potential benefits and possible risks of ketamine infusion, which is to be performed under my direction. Alternative methods of treatment have been discussed and I have answered the patient's questions.

Additional physician comments:

Printed name of physician:

Signature of physician:

Supplementary Table 1. Concomitant medications during acute course.

Psychotropic Medication Class	N (%)
Any antidepressant (%)	39 (72.2)
SSRI	12 (22.2)
SNRI	11 (20.4)
TCA	4 (7.4)
MAOI	5 (9.3)
Other (Bupropion, mirtazapine, vortioxetine)	14 (25.9)
Antipsychotic	29 (53.7)
Mood stabilizer/anticonvulsant	20 (37.0)
Valproic acid	2 (3.7)
Lamotrigine	13 (24.1)
Gabapentin	5 (9.3)
Other (Topiramate, Oxcarbazepine)	2 (3.7)
Lithium	10 (18.5)
Sedative/hypnotic	27 (50.0)
Benzodiazepine	25 (46.3)
Zolpidem	5 (9.3)
Stimulant	12 (22.2)
Any psychotropic	52 (96.3)

Supplementary Table 2. Concomitant medications for longer-term patients.

Time Point	Medications
Patient 1, baseline	Tranlycypromine 20mg, lurasidone 40mg, lamotrigine 100mg
3 months	Tranlycypromine 40mg, lurasidone 60mg, lamotrigine 200mg, lorazepam 1mg
6 months	Tranlycypromine 40mg, lurasidone 80mg, lamotrigine 300mg, lorazepam 1mg
12 months	Tranlycypromine 40mg, lurasidone 60mg, lamotrigine 300mg, riluzole 100mg
18 months	Tranlycypromine 40mg, lurasidone 60mg, lamotrigine 300mg
24 months	Tranlycypromine 60mg, lurasidone 20mg, quetiapine 25mg, lamotrigine 300mg
Patient 2, baseline	Buspirone 60mg, clozapine 250mg, lamotrigine 300mg, lorazepam 2mg, lithium 300mg, benztropine 1mg, glycopyrrolate 2mg, prazosin 4mg
3 months	Buspirone 60mg, clozapine 250mg, lamotrigine 350mg, lorazepam 2mg, lithium 300mg, benztropine 1mg, glycopyrrolate 2mg, prazosin 4mg
6 months	Buspirone 60mg, clozapine 250mg, lamotrigine 350mg, lorazepam 2mg, lithium 300mg, benztropine 1mg, glycopyrrolate 2mg, prazosin 4mg
12 months	Buspirone 60mg, clozapine 250mg, lamotrigine 350mg, lorazepam 2mg, lithium 300mg, benztropine 1mg, glycopyrrolate 2mg, prazosin 4mg
18 months	Buspirone 30mg, clozapine 250mg, lamotrigine 350mg, lorazepam 2mg, lithium 300mg, benztropine 1mg, glycopyrrolate 2mg, prazosin 4mg
24 months	Clozapine 250mg, lamotrigine 350mg, lithium 300mg, benztropine 1mg, glycopyrrolate 2mg, prazosin 4mg
Patient 3, baseline	Venlafaxine 150mg, bupropion 100mg, lorazepam 1mg, zolpidem 10mg
3 months	Venlafaxine 150mg, bupropion 100mg, lorazepam 1mg, zolpidem 10mg
6 months	Venlafaxine 150mg, bupropion 100mg, lorazepam 1mg, zolpidem 10mg
12 months	Venlafaxine 225mg, bupropion 100mg, lorazepam 1mg, zolpidem 10mg, trazodone 100mg
18 months	Venlafaxine 225mg, bupropion 100mg, lorazepam 1mg, zolpidem 10mg, trazodone 100mg
24 months	Venlafaxine 225mg, bupropion 100mg, lorazepam 1mg, zolpidem 10mg
Patient 4, baseline	Lamotrigine 400mg, clonazepam 2mg, lithium 900mg, methylphenidate 60mg
3 months	Lamotrigine 400mg, clonazepam 2mg, lithium 900mg, methylphenidate 60mg

6 months	Lamotrigine 400mg, clonazepam 2mg, lithium 1200mg, methylphenidate 60mg
12 months	Lamotrigine 150mg, clonazepam 2mg, lithium 1200mg, methylphenidate 60mg
18 months	Lamotrigine 150mg, clonazepam 2mg, lithium 1200mg, methylphenidate 30mg
24 months	Lamotrigine 150mg, clonazepam 2mg, lithium 1200mg, methylphenidate 30mg
Patient 5, baseline	Tranlycypromine 30mg, hydroxyzine 25mg, lorazepam .5mg, temazepam 15mg, lithium 600mg, gabapentin 600mg
3 months	Tranlycypromine 50mg, hydroxyzine 25mg, lorazepam .5mg, lithium 600mg, gabapentin 600mg
6 months	Tranlycypromine 60mg, lorazepam 1mg, lithium 600mg, gabapentin 600mg
12 months	Tranlycypromine 60mg, clozapine 100mg, risperidone 3mg, lorazepam 1mg, temazepam 15mg, gabapentin 600mg
18 months	Tranlycypromine 60mg, clozapine 100mg, risperidone 4mg, lorazepam 2mg, temazepam 15mg, gabapentin 600mg
24 months	Tranlycypromine 40mg, perphenazine 32mg, lorazepam 2mg, temazepam 15mg, gabapentin 200mg
Patient 6, baseline	Aripiprazole 15mg, lithium 300mg, amphetamine salts 40mg, trazodone 50mg
3 months	Aripiprazole 15mg, lithium 450mg, amphetamine salts 40mg
6 months	Aripiprazole 15mg, lithium 750mg, amphetamine salts 40mg
12 months	Risperidone 2mg, lithium 1200mg
Patient 7, baseline	Fluoxetine 80mg, quetiapine 50mg
3 months	Fluoxetine 80mg, quetiapine 50mg
6 months	Fluoxetine 80mg, quetiapine 50mg
12 months	Fluoxetine 80mg, quetiapine 50mg
Patient 8, baseline	Quetiapine 400mg, oxcarbazepine 600mg, lamotrigine 150mg
3 months	Quetiapine 400mg, oxcarbazepine 600mg, lamotrigine 150mg, Liothyronine 10mcg
6 months	Quetiapine 400mg, oxcarbazepine 350mg, lamotrigine 75mg, Liothyronine 10mcg
12 months	Quetiapine 275mg, oxcarbazepine 350mg, lamotrigine 75mg, Liothyronine 10mcg
18 months	Quetiapine 275mg, oxcarbazepine 350mg

Patient 9, baseline	Duloxetine 60mg, bupropion 150mg, gabapentin 400mg, lorazepam 1mg
3 months	Duloxetine 60mg, bupropion 150mg, gabapentin 400mg, lorazepam 1mg
6 months	Duloxetine 60mg, bupropion 300mg, gabapentin 400mg, lorazepam 1mg
12 months	Duloxetine 60mg, bupropion 300mg, gabapentin 400mg, lorazepam 1mg, modafinil 100mg
Patient 10, baseline	Phenelzine 45mg, alprazolam 2mg
3 months	Phenelzine 45mg, liothyronine 5mcg, alprazolam 2mg,
6 months	Venlafaxine 150mg, liothyronine 5mcg, alprazolam 2mg, gabapentin 200mg
12 months	Protriptyline 20mg, alprazolam 1mg
18 months	Pramipexole .125mg, alprazolam .25mg
24 months	Pramipexole .5mg
Patient 11, baseline	Desvenlafaxine 100mg, bupropion 300mg, buspirone 30mg, mirtazapine 30mg, lamotrigine 300mg
3 months	Desvenlafaxine 100mg, bupropion 300mg, buspirone 30mg, mirtazapine 30mg, lamotrigine 300mg
Patient 12, baseline	Fluvoxamine 200mg, clonidine .1mg, lurasidone 80mg, lithium 450mg
3 months	Bupropion 200mg, lurasidone 80mg, clonazepam .5mg, lithium 450mg,
Patient 13, baseline	Bupropion 150mg, trazodone 150mg, amphetamine salts 30mg, liothyronine 5mg, nortriptyline 75mg
3 months	Bupropion 150mg, trazodone 150mg, amphetamine salts 30mg, liothyronine 5mg
6 months	Bupropion 150mg, trazodone 50mg, amphetamine salts 30mg, liothyronine 5mg
Patient 14, baseline	Bupropion 450mg, methylphenidate 36mg, venlafaxine 75mg
3 months	Bupropion 450mg, methylphenidate 36mg, duloxetine 60mg
6 months	Bupropion 300mg, methylphenidate 54mg, duloxetine 120mg
12 months	Bupropion 300mg, methylphenidate 54mg, duloxetine 120mg