

# Case Report

## Rapid Resolution of Grief with IV Infusion of Ketamine: A Unique Phenomenological Experience

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### ABSTRACT

Ketamine, a primarily FDA-approved anaesthetic agent is also used as recreational drug. Based on preclinical findings and later the clinical observations it is noted to have rapid antidepressant effect due to its mechanisms related to NMDA antagonism. In spite of established evidence of ketamine being effective in depression with significant role in treatment resistant cases as well, there was absolute dearth of literature regarding its utility in grief-related disorders. In this context we present a case of 28-year-old graduate male who presented to us in complicated grief following death of his wife due to obstetric complications. With the patient and immediate family members consenting for use of ketamine as off-label use, patient had single IV infusion of ketamine following which he had unique phenomenological experience ultimately resolving his grief in few minutes. Through this case we highlight the enormous therapeutic promise of ketamine in complicated grief.

**Key words:** Antidepressant, grief, ketamine, rapid resolution

### INTRODUCTION


Ketamine is a non-competitive, high affinity NMDA antagonist approved by the FDA in 1970, primarily as an anaesthetic agent. Later research demonstrated that NMDA antagonists produced antidepressant-like effects in animal models of depression.<sup>[1,2]</sup> These preclinical findings were complemented by subsequent noteworthy clinical observations.<sup>[3,4]</sup> with intravenous (IV) ketamine, which was found to produce rapid antidepressant effects. Though the sustainability effect remains unknown, several case reports, case series and clinical trials have documented the rapid effect on depressive symptoms

even among individuals with treatment resistant depression.<sup>[5]</sup> There have been attempts to use ketamine for abreaction with positive outcome.<sup>[6]</sup>

However, there are no documented cases or reviews concerning ketamine usage in grief. Conventionally the grief therapy involves assisting and working with the individuals with grief to move through the emotional stages like denial, anger, bargaining, depression and acceptance apart from use of antidepressants. This process of accepting the reality of the loss, acknowledging the pain of the loss, adapting to an environment in which the deceased is missing, and emotionally relocating the deceased and moving on with life requires substantial period of time in terms of months. In this context we present a case wherein there was rapid resolution of grief following single IV infusion of ketamine at a low dose.

### CASE REPORT

A 28-year-old graduate male was brought to the casualty department of our tertiary care hospital by his family

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members with the complaints of being unresponsive to external stimuli, poor oral intake and decreased personal care since 1 week following the death of his wife due to obstetric complications during delivery of their second child. He was reportedly expressing ideas of hopelessness, voiced self-harm ideations at times and would repeatedly call out his wife's name before presenting to us. However, there were no suicidal attempts. There was no family history of depressive disorders and the patient did not have any history of substance abuse.

On examination he was found to be dishevelled, with gross psychomotor retardation and speaking in whispering voice. His vitals were stable and systemic examination was unremarkable. At times he would remain mute with vacant expression on his face and other times he would burst out into crying spells. He was provisionally diagnosed to be having complicated grief reaction and was started on Escitalopram upto 10 mg/day along with lorazepam at doses of 2 mg/day for his catatonic symptoms. But the patient was poorly compliant and continued to be symptomatic. The treating team considered ECT because of presence of catatonic symptoms, poor oral intake, self-harm ideations and severe guilt. The family members were not willing for ECT for some reasons and hence an alternative option of starting the patient on ketamine was suggested to them. The informed consent was taken from immediate family members explaining the rationale, off-label status of drug and possible adverse effects. The same was communicated to the patient who was by then had started reporting of the distress and wish to come out of the current state following which he too consented for the procedure. This also helped in gaining his cooperation and establishing better rapport so essential for such procedures. Detailed physical examination was done and routine investigations of blood and urine were carried out to rule out physical contraindications for the use of ketamine. He was given an IV infusion of ketamine 0.5 mg/kg/hour which lasted around 40 minutes. His pulse rate, BP, O<sub>2</sub> saturation and temperature were monitored every 5 minutes.

Within few minutes of administration, the therapist initiated the conversation with the patient with open-ended questions pertaining to his feelings, emotions and distress. Later as the patient became verbally communicative and suggestible, he was encouraged to vent out his distress, guilt and unresolved conflicts. Once the patient developed sedation to the extent he stopped conversing, the procedure was terminated. The patient narrated later his subjective experience of trance-like state during the administration of the drug as below:

"I was picked up by a flying chariot which travelled at a rocket speed and landed on what seemed to be like heaven. There was heavenly peace and pleasant sight all around. Surprisingly everybody were dressed alike. I eagerly looked for my wife amongst many people offering prayers to Lord Shiva. I noticed in some time my wife standing at a shouting distance offering prayers to the Lord who wore snake around his neck. I was overwhelmed seeing my wife. I could not control the emotions and I approached her and interrupted her prayers to speak to her. In return she said she no longer belong to me. Instead she belonged to that heaven. She went on to say that she had no husband and there are no 'earthly' relationships there in that world. She even suggested me to go back to earth as my time was not up yet. I felt relieved that finally I could meet my wife for one last time and realized I still had responsibilities of taking care of my children. The same chariot which brought me there came back to earth to drop me down".

Following the administration of the drug ketamine, the patient had brief period of giddiness which subsided gradually. Within few minutes patient was communicative, cheerful and started taking food orally. He later shared his unique phenomenological experience with many of his family members and other inmates. The antidepressants were continued while the lorazepam was tapered and stopped. The patient insisted on one more injection of the similar kind but was not given explaining him the addiction potential of the medication. He was maintaining well even after 3 months of the treatment during the regular follow-ups.

## DISCUSSION

Despite the ongoing debate on medicalising bereavement/grief, it is widely agreed that grief, complicated in terms of duration or presentation with significant impairment, warrants treatment.<sup>[7]</sup> Irrespective of severity of the grief, the usual course of its resolution is helplessly long. Since the grief reactions come under the paradigm of depression, it was worth while to explore ketamine's utility in this regard. Ketamine's rapid antidepressant effects and usefulness in patients with treatment resistant depression has been proved time and again.<sup>[8,9]</sup> The mechanisms underlying ketamine's effects, the simultaneous blockade of NMDA receptors and activation of AMPA receptors, are integral for the induction of the antidepressant response.<sup>[10]</sup> Through this current case we highlight the possible potential ketamine has with regard to rapidly resolving grief through abreaction like phenomenon brushing aside the conventional concepts of grief being an enduring condition. The development of ketamine as a rapidly acting antidepressant drug has the potential to

revolutionise clinical treatment. Nevertheless, the clinical use of ketamine poses a number of challenges like its addiction potential.<sup>[11]</sup> Considering the outcome of this case in discussion and theoretical back up of enormous therapeutic promise of ketamine and related glutamatergic antidepressants.<sup>[12]</sup> it is worth carrying out research on similar lines to give substantial evidence for beneficial role of ketamine in treatment of complicated grief.

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