Article: EPA-1659
Topic: E02 - e-Poster Oral Session 02: Depression and Suicide

REPEATED S-KETAMINE INFUSIONS IN TREATMENT-RESISTANT DEPRESSION

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Background: Ketamine, an N-methyl-D-aspartate antagonist, rapidly improves depressive symptoms in individuals with treatmentresistant depression. However, most trials using ketamine were limited to single administration and were performed with the racemic mixture of ketamine. The aim of this case series was to investigate the clinical efficacy of multiple intravenous administrations of S-ketamine in the acute treatment of treatment-resistant depression.

Methods: In 6 patients suffering from Major Depression (DSM-IV criteria) and being pharmacoresistant to at least 2 antidepressants , intravenous Ketamine treatment was started with a 40 minute administration of 0.25 mg S-ketamine/kg body weight i.v. The treatment was performed over 3 weeks using 2 infusions per week. Patients were kept on their current pharmacotherapy regimen (including antidepressants). The patients were rated using the 21-item version of the Hamilton rating scale for depression (HAMD-21) before and 120 minutes after each ketamine infusion.

Results: In 5 of 6 patients a strong improvement of depressive symptoms occurred already after the first ketamine infusion. The response could be stabilized by the following infusions. In 2 patients dissociative symptoms could be seen.

Conclusions: Multiple administrations of ketamine appear to be well tolerated, although negative effects on cognition have been described after longer use. The occurrence of dissociative symptoms in two patients in our study must be viewed as an unpleasant side effect. In the literature there is some evidence, that S-ketamine has better tolerability than racemic ketamine but similar antidepressant effects.

Table 1. Clinical and Demographic Variables

Subject	1	2	3	4	5	6	Mean ± SD
Age (years)	62	50	53	63	46	78	58.5 ± 19
Gender	F	F	M	F	M	M	
Duration of illness (years)	13	16	11	30	11	17	
Duration of current episode (weeks)	18	22	20	16 (ECT yes)	24 (ECT yes)	36	
Concomitant medication	Lithium 675 mg; mirtazapine 45 mg; olanzapine 10 mg; zopiclone 11.25 mg	Lamotrigine 200 mg; agomelatine 50 mg; amitriptyline 120 mg	Quetiapine 500 mg; mirtazapine 30 mg; lorazepam 1.5 mg	Amitriptylin-oxide 150 mg; lorazepam 0.75 mg	Doxepin 50 mg	Mirtazapine 45 mg; risperidone 6 mg	
HAMD scores	0 → 2 h p.i.	0 → 2 h p.i.	0 → 2 h p.i.	0 → 2 h p.i.	0 → 2 h p.i.	0 → 2 h p.i.	
Ketamine 1	19 → 11	22 → 3	19 → 9	35 → 16	21 → 13	33 → E.n.p.	
Ketamine 2	13 → 9	10 → 7	18 → 10	34 → 22	11 → 6		
Ketamine 3	13 → 6	5 → 3	14 → 8	27 → 22	10 → 5		
Ketamine 4	13 → 7	2 → 1	12 → 7	27 → 24	11 → 7		
Ketamine 5	13 → 7	2 → 1	13 → 9	26 → 26	5 → 2		
Ketamine 6	14 → 11	2 → 2	12 → 10	26 → 25	4 → 2		

SD, standard deviation; HAMD, Hamilton rating scale for depression; p.i., post infusion; E.n.p., examination not possible.

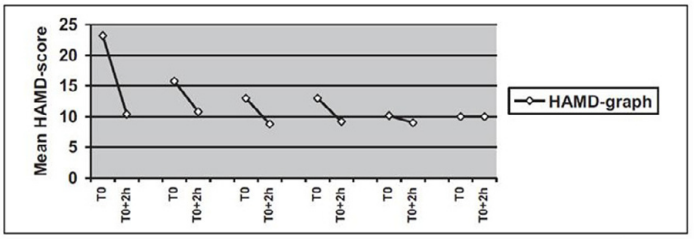

Figure 1. Course of averaged HAMD scores over 6 ketamine infusions. Rating always performed 0 minutes before and 120 minutes after administration of ketamine (patient 6 excluded, see above).

https://doi.org/10.1016/S0924-9338(14)78804-2 Published online by Cambridge University Press