



Is Ketamine and Magnesium better than ketamine alone for chronic pain?

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Introduction

Sub-anaesthetic ketamine infusions are an established treatment option in the management of chronic pain. We sought to confirm our clinical impression that IV ketamine and 40mmol magnesium was better than IV ketamine alone.

Method

We audited the outcome of the first treatment in a consecutive series of patients seen at our clinic with chronic pain and treated in two hospitals with ketamine infusions with one allowing the addition of 40mmol magnesium over 8 hours and the other not allowing magnesium.

We report the maximum rate, amount of ketamine administered, duration of effect, global perceived effect, average Brief Pain Inventory Pain (BPI) "Pain Intensity" & "Pain Interference" at baseline, 1, 3 and 6 months and reported adverse events.

Treatment data was collected and entered prospectively into an electronic database (MedquestOzPlus, from <http://ozmed.com.au:86>). Data sets were compared using paired t-tests in Excel 2010 for Windows.

Results

We found 53 patient episodes of 8 hour ketamine infusions between March 2012 and April 2013. Of 20 patients in the combined Ketamine and magnesium group, at 1 month, 6 were unimproved and 11 reported improvement. Of the 33 patients in the No Magnesium group, at 1 month, 4 patients were unimproved and 19 patients reported improvement.

Demographics

Demographics	Patients	Age	Gender	Pain Duration
Magnesium	20	50.4	11M, 9F	5.6 years
No Magnesium	33	53.3	12M, 21F	9.3 years

Ketamine Infusion Details

Ketamine	Max Rate Mg/h	Range mg/h	Amount Mg	Benefit Days
Magnesium	44 sd(8)	30-60	254 (sd61)	29.9
No Magnesium	46 sd(11)	15-60	267(sd84)	35.3

Brief Pain Inventory – Compound Pain Intensity Score

*p<0.05	T0	T1m	T3m	T6m
Magnesium	6.4/10	5.1	5.8	5.5
No Magnesium	7.0/10	6.7	6.8	5.9

Brief Pain Inventory – Pain Interference Score

*p<0.05	T0	T1m	T3m	T6m
Magnesium	6.5/10	6.3	6.2	5.9
No Magnesium	6.5/10	6.7	6.2	5.8

Reported Adverse Events

8h ketamine + Magnesium		8h ketamine Alone	
Very Common >10%	%	Very Common >10%	%
None	45	None	69
Nausea	40	Nausea	16
Headache	20	Hallucinations	13
Common 1-10%		Common 1-10%	
Anxiety	5	Confusion	6
Fatigue	5	Vomiting	6
		Anxiety	3
		Cramping	3
		Blurred vision	3
		Dizziness	3

Conclusion

Although this audit has not confirmed our clinical impression, it revealed a non-significant trend (p=0.055) towards greater pain relief at 1 month with the combined Ketamine and Magnesium infusions that may reach significance with more subjects.

The audit also shows the use of magnesium is still investigational and more work needs to be done to determine it's role and which if any patients benefit.

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