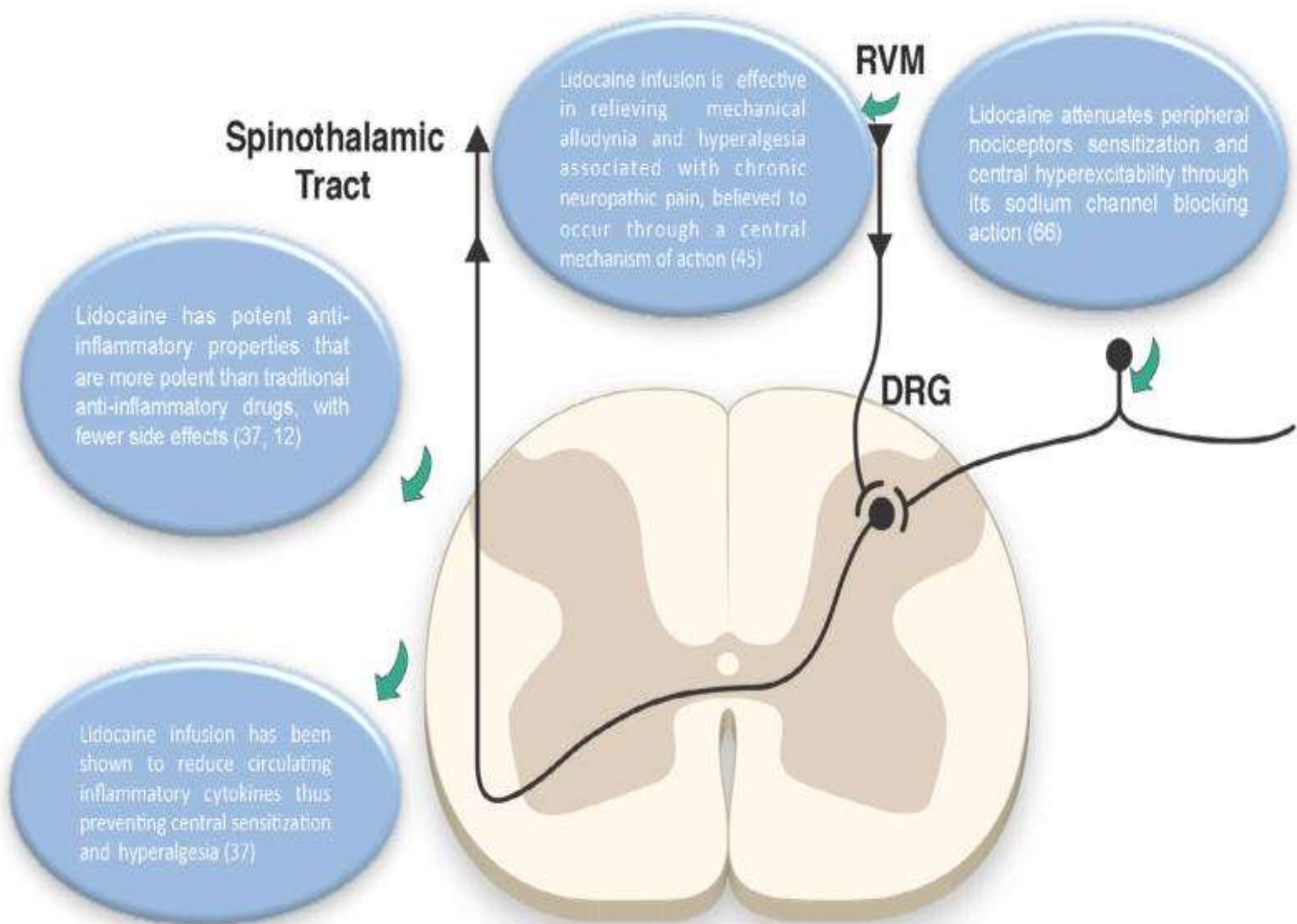


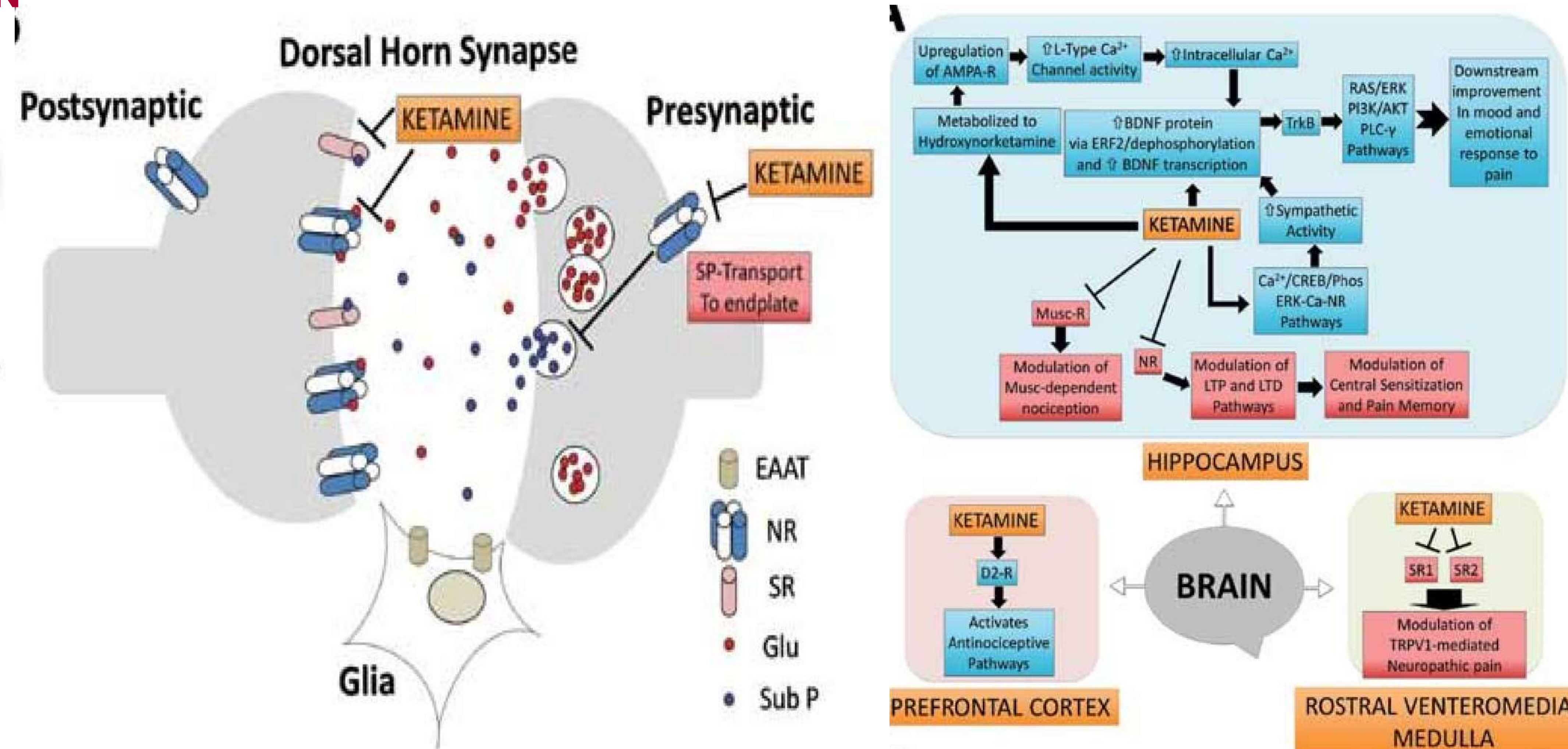
Infusion Therapy For Chronic Pain Conditions

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LIDOCAINE INFUSION MECHANISM OF ACTION



KETAMINE INFUSION MECHANISM OF ACTION



REFERENCES

- Iacobucci, Gary J. et al. "Ketamine: An Update on Cellular and Subcellular Mechanisms with Implications for Clinical Practice." *Pain physician* 20 2 (2017): E285-E301 .
- Kandil, Enas et al. "Lidocaine Infusion: A Promising Therapeutic Approach for Chronic Pain." *Journal of anesthesia & clinical research* vol. 8,1 (2017): 697. doi:10.4172/2155-6148.1000697
- Hanne Gottrup, Flemming W. Bach, Gitte Juhl, Troels S. Jensen; Differential Effect of Ketamine and Lidocaine on Spontaneous and Mechanical Evoked Pain in Patients with Nerve Injury Pain. *Anesthesiology* 2006; 104:527-536
- Ray JC, Cheng S, Tsan K, Hussain H, Stark RJ, Matharu MS and Hutton E (2022) Intravenous Lidocaine and Ketamine Infusions for Headache Disorders: A Retrospective Cohort Study. *Front. Neurol.* 13:842082. doi: 10.3389/fneur.2022.842082
- Hand PJ, Stark RJ. Intravenous lignocaine infusions for severe chronic daily headache. *Med J Aust.* (2000) 172:157-9. doi: 10.5694/j.1326-5377.2000.tb125538.x
- Lauritsen C, Mazuera S, Lipton RB, Ashina S. Intravenous ketamine for subacute treatment of refractory chronic migraine: a case series. *J Headache Pain [Internet].* (2016) 17:106. doi: 10.1186/s10194-016-0700-3
- Orhurhu, Vwaire MD, MPH*; Orhurhu, Mariam Salisu MD, MPH†; Bhatia, Anuj MD, FRCPC‡; Cohen, Steven P. MD§,||. Ketamine Infusions for Chronic Pain: A Systematic Review and Meta-analysis of Randomized Controlled Trials. *Anesthesia & Analgesia* 129(1):p 241-254, July 2019. | DOI: 10.1213/ANE.0000000000004185
- Gordeen, A., Zemedhun, G., Abd-Elseyed, A. & Yolland, M. Ketamine infusion and its role in Chronic pain. *ASRA News* 46, (2022).
- Wilkinson ST, Sanacora G. Considerations on the Off-label Use of Ketamine as a Treatment for Mood Disorders. *JAMA.* 2017;318(9):793-794. doi:10.1001/jama.2017.10697

EXISTING EVIDENCE AND INDICATIONS FOR KETAMINE INFUSIONS

Ketamine infusions, according to the American Society of Anesthesiologists and American Society of Regional Anesthesia and Pain Medicine Practice Guidelines for Chronic Pain Management, have indications with the following evidenced-based dosing recommendations:

- Moderate evidence: CRPS, medium-term improvement. 22 mg/h for 4 days or 0.35 mg/kg/h for 4 hours repeated in 10 consecutive days.
- Weak evidence: Pain related to spinal cord injury, short-term improvement. Investigators used variable methods, one protocol used a total dose of 80 mg infused over 5 hours.
- Little to no supporting evidence: Conditions such as mixed neuropathic pain, phantom limb pain, fibromyalgia, migraine headache, low back pain, ischemic pain, and postherpetic neuralgia.

Chronic Pain Condition	Type of Infusion	Responders (Number)	Responders (%)
Osteoarthritis	Ketamine	4	100.00%
	Lidocaine	0	0.00%
Multiple Sclerosis	Ketamine	2	100.00%
	Lidocaine	0	0.00%
Chronic Abdominal Pain	Ketamine	6	75.00%
	Lidocaine	2	25.00%
Migraine Headaches	Ketamine	6	66.67%
	Lidocaine	3	33.33%
Fibromyalgia	Ketamine	17	60.71%
	Lidocaine	11	39.29%
Polyneuropathy	Ketamine	6	60.00%
	Lidocaine	4	40.00%
CRPS	Ketamine	6	37.50%
	Lidocaine	10	62.50%

DIRECTIONS FOR FUTURE STUDIES

1. Comparing total success to failures
2. Expanding list of treated conditions
3. Varying frequencies of infusions or increased dosage
4. Synergistic effects of infusions with other therapies
5. Joint evaluations with psychiatry for confounding comorbidity treatment pre-existing conditions

DISCLOSURES

None to Declare
 No External Funding