

Lidocaine Infusion as an Alternative Treatment Option for Ketamine in a Patient with Acute Vaso Occlusive Crisis Pain.

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Introduction

- Ketamine infusion has been implemented to treat chronic pain disorders including neuropathic pain.
- Sick cell disease patients experience neuropathic pain in which Ketamine could be effective.
- Although not very common, side effects of ketamine infusion could be significant.
- Inability to tolerate ketamine lead in certain cases to cessation of the Infusion despite its significant role in pain control.
- There is evidence that Lidocaine maybe an effective alternative to Ketamine in such patients.

Case description

We would like to report a case of a 38 year-old female, 68 kg patient with history of sickle cell disease, HbSS c/b stroke, recurrent ACS, multiple DVT including SVC thrombus, recurrent PE on warfarin therapy. She required multiple hospitalization for management of vaso occlusive crisis.

Case description

Her home regimen consisted of Morphine ER 30 mg Q12, Norco 10-325 mg q6h PRN, dilaudid 4 mg q4r PRN (alternating with the Norco when needed), Morphine IR 30 mg q4h PRN. Upon her admission, the primary team restarted her home Morphine ER 30 mg Q12, Norco 10-325 mg q6h PRN, dilaudid 4 mg q4r PRN and ordered morphine 8 mg IV push Q 3 hours. The patient refused the morphine PCA due to previous history of excessive sedation. Two days after her admission, the patient was still having severe pain with episodes of 10/10 pain.

Of note, Ketamine infusion was tried on a previous admission however, it was discontinued due to somnolence and severe nausea despite lowering the dose as well as ineffective pain control. The pain management team was consulted and evaluated the patient. The patient was offered the Lidocaine infusion as an alternative treatment along with her Morphine ER 30 mg Q12, IV Morphine 8 mg Q3h PRN, Toradol 15 mg Q6h as well as Tylenol 1 gram Q8h.

Case description

Lidocaine infusion @ 1 mg/kg/h was started. Few hours after starting the infusion, the patient reported significant improvement of pain. Her pain score went down to 6/10 and her PRN IV morphine requirements were decreased. The infusion was discontinued after 24 hours per our institutional protocol. The patient's pain was still controlled afterwards and she was discharged 24 hours after discontinuing the infusion in stable condition. The patient was admitted few months afterwards with a similar episode of vaso occlusive crisis pain and offered the Lidocaine infusion again which was helpful. The same outcome was found on a third admission due to vaso occlusive crisis although the Lidocaine infusion was offered @ 0.5 mg/kg/h due to elevated liver function tests and yet provided satisfying pain relief.

Discussion

- The mechanism of action of lidocaine is by blocking the voltage-gated sodium channels leading to a reversible block of action potential propagation

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- When applied as an infusion, lidocaine may directly benefit nociceptive pain caused by VOC
- In addition to its anti inflammatory properties, another benefit of systemic lidocaine administration is NMDA antagonism which, provides anti hyperalgesia by modulating central sensitization, a benefit that is only seen when lidocaine is administered systemically.
- This property may contribute to treating the neuropathic component of pain that is seen in SCD patients.

Conclusion

We conclude that Lidocaine infusion could be used effectively as an alternative treatment to ketamine in patients with chronic pain due to vaso occlusive crisis

References:

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