

Intravenous Lignocaine Infusion for Intractable Pain in Ewing's Sarcoma

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Abstract

A 23-year-old female presented to our palliative care center with Ewing's sarcoma of the humerus with lung metastases. Pain in her arm was unrelieved by nonsteroidal anti-inflammatory drugs, neuropathic medication as well as morphine. She could not tolerate any further increase in opioid dose but was so distraught due to the pain that she wanted to die. An intravenous lignocaine infusion in a dose of 2 mg/kg was given over an hour for three successive days. This successfully relieved her pain after which she was settled with her original medication. We feel that in palliative care settings, where intractable pain and tolerance to morphine are so common, intravenous lignocaine infusions could provide a safe and effective tool for pain relief.

Keywords: Ewing's sarcoma, intractable pain, intravenous lignocaine, palliative care

INTRODUCTION

Cancer pain, being multidimensional, is notorious for being intractable. In the palliative care setting, where the focus is on improving the quality of life of the patient, intractable pain is a major deterrent. Neuropathic component of cancer pain is the most difficult to treat and in our opinion has the greatest part to play in refractory pain patients.

The effectiveness of systemic lignocaine in relieving pain has been recognized for over 50 years now. It is being used as a diagnostic and therapeutic tool for relief of neuropathic pain.^[1] Early reports described the use of intravenous lignocaine to relieve cancer and postoperative pain.^[2] Interest reappeared decades later when case series and clinical trials reported that parenteral lignocaine and its oral analogs relieved neuropathic pain in some patients. With the recent publication of clinical trials with high-quality standards, lignocaine infusion therapy is making a resurgence.^[3]

CASE REPORT

A 23-year-old female, a known case of Ewing's sarcoma with lung metastases, post surgery and palliative radiotherapy presented to our palliative care center with a 3-week duration of intractable pain in her right arm. Pain was sharp, shooting

with a baseline aching character, having a numerical scale score of 8/10, and continuous, affecting sleep and food intake. Initially, she was comfortable on morphine (20 mg q4 h), ibuprofen (400 mg tds), and gabapentin (300 mg tds), but subsequently she had no relief with her routine morphine dose and 3 doses/day of breakthrough analgesic with oral morphine. The high dose of morphine made her drowsy and irritable, hence further increase in dose could not be considered. She was so distraught that she repeatedly asked us to help her die. It was decided to give her a trial of intravenous lignocaine for which a written informed consent was obtained. A baseline electrocardiogram (ECG) was recorded, and basic laboratory investigations including liver function tests and serum electrolytes were done. Preservative-free lignocaine infusion in a dose of 2 mg/kg over 60 min was started under monitoring with a 5-lead ECG, pulse oximeter, and noninvasive blood pressure (NIBP). Her ECG and SpO₂ were monitored continuously and BP was measured every 5 min during infusion. Her pain score was assessed every 15 min. ECG, SpO₂, and NIBP were monitored for 2 h after discontinuation of

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the infusion. Pain score was monitored hourly for the next 24 h. The infusion was repeated daily till pain control was achieved.

RESULTS

Pain score by Numerical Rating Scale (NRS) came down from 8/10 to 4/10 after the first infusion. The patient was continued on her routine medication. The effect of the first infusion lasted for 6 h. However, the efficacy was maintained for a long duration after the 2nd and 3rd doses of lignocaine infusion on consecutive days, enabling discharge from hospital with a NRS of 2/10, the relief lasting over 3 weeks.

DISCUSSION

Lignocaine is a local anesthetic of the amide type, a sodium channel blocker producing analgesia by blockade of peripheral and central sodium ion gate channels, including the spinal dorsal horn as well as inhibition of neural ectopic discharges.^[4] Thus, both central and peripheral mechanisms come into play. Systemic lignocaine is thought to have its suppressive effects on spontaneous ectopic discharges of the injured nerve without blocking the normal nerve conduction. However, the scientific basis underlying the clinical application of lignocaine therapy does not appear to be complete.^[5]

Cancer pain is a complex entity and is a major factor that determines the quality of life of patients. Palliative care physicians tackle most of the pain using the well-known WHO analgesic ladder. However, they are constantly on the lookout for better strategies to manage intractable pain which overwhelms this approach. The opioid-sparing properties of lignocaine infusion added to its analgesic and antihyperalgesic

properties make lignocaine infusion a viable option for pain control in the palliative care setting. Lignocaine, on intravenous use, is known to have pharmacodynamic effects on heart rate and BP, warranting a cautious monitored infusion to ensure safety. Adequate pain relief was observed after a 3-day use of the infusion; further studies are required to balance the safety and efficacy of the infusion.

CONCLUSION

Intravenous lignocaine in a 3-day protocol was found to be a safe and effective option to ameliorate intractable pain in palliative care patients, who are not responsive or tolerant to conventional treatment.

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Conflicts of interest

There are no conflicts of interest.

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