

Evidence Based Guideline

Intravenous Anesthetics for the Treatment of Chronic Neuropathic Pain

File Name: intravenous_anesthetics_for_the_treatment_of_chronic_neuropathic_pain
Guideline Number: EBG.MED1499
Origination: 11/2009
Last CAP Review: Not applicable
Next CAP Review: 5/2010
Last Review: 10/2009

Description of Procedure or Service

Intravenous (IV) infusion of lidocaine or ketamine has been used for the treatment of chronic neuropathic pain. Chronic neuropathic pain disorders include phantom limb pain, post-herpetic neuralgia, complex regional pain syndromes, diabetic neuropathy, and pain related to stroke or spinal cord injuries.

For this application, one or more courses of IV infusion would be administered over a period of several hours or several days.

Neuropathic pain is often disproportionate to the extent of the primary triggering injury, and may consist of thermal or mechanical allodynia, dysesthesia, and/or hyperalgesia. Allodynia is when pain occurs from a stimulus that normally does not elicit a painful response (e.g., light touch, warmth). Dysesthesia is when there is a constant or ongoing unpleasant or electrical sensation of pain. Hyperalgesia is when there is an exaggerated response to normally painful stimuli. Symptoms may continue for a period of time that is longer (e.g., 6 months or more) than clinically expected after an illness or injury. It is proposed that chronic neuropathic pain results from peripheral afferent sensitization, neurogenic inflammation, and sympathetic afferent coupling, along with sensitization and functional reorganization of the somatosensory, motor, and autonomic circuits in the central nervous system. Therefore, treatments focus on reducing activity and desensitizing pain pathways, thought to be mediated through N-methyl-d-aspartate (NMDA) receptors, in the peripheral and central nervous system. Sympathetic ganglion blocks with lidocaine have been used for a number of years to treat sympathetically maintained chronic pain conditions such as complex regional pain syndrome (CRPS, previously known as reflex sympathetic dystrophy). Test infusion of an anesthetic has also been used in treatment planning to assess patient responsiveness to determine whether medications such as oral mexiletine or oral ketamine may be effective. A course of IV lidocaine or ketamine, usually at sub-anesthetic doses, has also been examined. This approach for treating chronic neuropathic pain differs from continuous subcutaneous or IV infusion of anesthetics for the management of chronic pain conditions such as terminal cancer pain, which are not discussed in this policy.

Courses of IV anesthetic agents may be given in the inpatient or outpatient setting as part of a pain management program, with the infusion of a sub-anesthetic dose preceded by a bolus infusion to achieve desired blood levels sooner. Lidocaine, which prevents neural depolarization through effects on voltage-dependent sodium channels, is also used systemically for the treatment of arrhythmias. Adverse effects for lidocaine are common and can be mild to moderate, including general fatigue, somnolence, dizziness, headache, peri-orbital and extremity numbness and tingling, nausea, vomiting, tremors, and changes in blood pressure and pulse. Severe adverse effects can be arrhythmias, seizures, loss of consciousness, confusion, or even death. Lidocaine should only be given IV to patients with normal conduction on electrocardiography and normal serum electrolyte concentrations to minimize the risk of cardiac arrhythmias.

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Ketamine is an antagonist of the NMDA receptor and a dissociative anesthetic. It is the sole anesthetic agent approved for diagnostic and surgical procedures that do not require skeletal muscle relaxation. Respiratory depression may occur with overdosage or too rapid a rate of administration of ketamine; it should be used by or under the direction of physicians experienced in administering general anesthetics. Ketamine is a schedule III controlled substance. Psychological manifestations vary in severity from pleasant dream-like states to hallucinations and delirium, and can be accompanied by confusion, excitement, aggression, or irrational behavior. The occurrence of side effects with IV anesthetics may be reduced by the careful titration of sub-anesthetic doses. However, the potential benefits of pain control must be carefully weighed against the potential for serious, harmful side effects.

*****Note: This Evidence Based Guideline is complex and technical. For questions concerning the technical language and/or specific clinical indications for its use, please consult your physician.**

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Not applicable.

Medical Evidence regarding Intravenous Anesthetics for the Treatment of Chronic Neuropathic Pain indicates it is not recommended in the following situations:

Intravenous infusion of anesthetics (e.g., ketamine or lidocaine) for the management of chronic neuropathic pain is not recommended.

Intravenous (IV) lidocaine is approved systemically by the U.S. Food and Drug Administration (FDA) for the acute treatment of arrhythmias and locally as an anesthetic. IV lidocaine for the treatment of chronic pain is an off-label use.

Ketamine hydrochloride injection is FDA-indicated for diagnostic and surgical procedures that do not require skeletal muscle relaxation, for the induction of anesthesia prior to the administration of other general anesthetic agents, and to supplement low-potency agents, such as nitrous oxide. IV ketamine for the treatment of chronic pain is an off-label use.

Intractable pain presents a great challenge to patients and their healthcare providers. Recent evidence suggests that IV courses of lidocaine and ketamine may provide at least temporary relief to some chronic pain patients. However, the severity of side effects raises questions about the overall health benefit of this procedure. Additional clinical trials under carefully monitored and controlled conditions are needed to evaluate treatment protocols, including the co-administration of treatments to attenuate the serious side effects of these agents. Double-blind, placebo-controlled studies are also needed to establish the long-term safety and efficacy of sodium channel and N-methyl-D-aspartate (NMDA)-antagonists in the treatment of chronic neuropathic pain.

Benefits Application

Please refer to certificate for availability of benefit. This guideline relates only to the services or supplies described herein. Benefits may vary according to benefit design; therefore certificate language should be reviewed before applying the terms of the guideline.

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Billing/Coding/Physician Documentation Information

This guideline may apply to the following codes. Inclusion of a code in this section does not guarantee that it will be reimbursed. For further information on reimbursement guidelines, please see Administrative Policies on the Blue Cross Blue Shield of North Carolina web site at www.bcbsnc.com. They are listed in the Category Search on the Medical Policy search page.

Applicable codes: 96365, 96366, 96374, J2001

Scientific Background and Reference Sources

BCBSA Medical Policy Reference Manual [Electronic Version]. 5.01.16, 8/13/2009

Senior Medical Director - 10/2009

Policy Implementation/Update Information

11/9/09 New Evidence Based Guideline issued. Reviewed with Senior Medical Director 10/13/2009. Intravenous infusion of anesthetics (e.g., ketamine or lidocaine) for the management of chronic neuropathic pain is not recommended. (btw)

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