Lidocaine 5% Patch in Localized Neuropathic Pain

Sir,

The International Association for the Study of Pain has defined neuropathic pain (NP) as "pain caused by a lesion or disease of the somatosensory nervous system."[1] Pathophysiology of NP involves both peripheral and central mechanisms. Localized NP is a distinct entity which is seen in a lot of conditions. Localized NP is characterized by consistent and circumscribed areas of pain associated with negative or positive sensory signs and/or spontaneous symptoms characteristic of NP.[2] It could be due to infectious, metabolic, postoperative, nerve entrapment or compression, and chemotherapy induced.[3] Table 1 shows the situations causing commonly encountered localized NP. In this condition, there is neuronal hyperexcitability due to plastic changes in afferent nociceptive fibers from peripheral and central nerves. There is also central sensitization and hyperexcitation of spinal nociceptive neurons leading to increase in spontaneous discharge along with impairment of modulatory descending inhibitory controls. Routinely used medications for NP such as antidepressants, antiepileptics, and opioids usually do not provide effective relief in localized NP. On the other hand, patients suffer with unwanted adverse effects due to the use of above-mentioned medications, especially elderly patients and patients with medical comorbidities. In resistant situations, 5% lidocaine and 8% capsaicin transdermal patches have been used successfully. Although lidocaine 5% patch has been used in many localized NP, 8% capsaicin has been found beneficial only in postherpetic neuralgia (PHN) and NP due to HIV.[4]

When used as a patch, lidocaine nonselectively blocks sensory afferents of small damaged pain fibers, thus reducing ectopic discharge and signal propagation. Lidocaine patch does not lead to a sensory block due to blockade of Na+ channels present on large myelinated Aβ sensory fibers. The patch has a negligible or no systemic absorption after application (3%–5%) usually gets systemically absorbed which is negligible. Till date, local anesthesia systemic toxicity has not been reported with lidocaine patch. Therefore, dose adjustment is not required in patient with mild-to-moderate renal and hepatic impairments. Commonly encountered adverse effects with routinely used chronic NP medications such as sedation, constipation, and cognitive dysfunction can totally be avoided with the use of patches. Some patients do complain erythema, itching, burning, and edema at the site of application, but it is self-limiting and resolves once the patch is removed. The patch should be preferably avoided in infected, atrophic, and injured skin. Long-term use of 5% lidocaine patch has been established, especially in patients with PHN, postoperative pain, and in complex regional pain syndrome-1 (up to 3–5 years).[5]

Table 1: Causes of localized neuropathic pain with examples

Cause of localized neuropathic pain	Examples
Infectious disease	PHN and AIDS
Metabolic	Diabetic polyneuropathy
Toxic	Alcoholic neuropathy
Vitamin deficiency	B12 deficiency
Postoperative	Thoracotomy, mastectomy, cesarean section, head-and-neck cancer surgeries, and posthernioplasty
Nerve entrapment	Carpal tunnel syndrome
Cancer chemotherapy	Vinca alkaloids, taxanes, and platinum compounds
Miscellaneous	Complex regional pain syndrome 1 and radiculopathies

PHN: Postherpetic neuralgia

Although lidocaine patch has shown efficacy in certain category of patients, there is no robust evidence from good quality randomized controlled studies to justify the use of lidocaine patch to treat all categories of localized NP.[6] Right now, the use of patch is not recommended in pregnancy and children.

To conclude, the lidocaine patch is a reasonable alternative in patients with localized NP as mentioned earlier. It is devoid of adverse effects which are observed with routinely used oral medications, is safe, well tolerated, and can be used for a long duration. It can be used along with other systemic medications also.

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Conflicts of interest

There are no conflicts of interest.

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