Part 4 – Topical Agents

Apart from anticonvulsants and tricyclic antidepressants, topical local anaesthetics are also often recommended and prescribed as first-line pharmacological therapy for certain neuropathic pain conditions.1–4 Topical anaesthetics provide analgesia by blocking voltage-gated neuronal sodium channels thereby preventing the generation and transmission of nerve impulses.5–7

The most commonly used topical agent is lidocaine, available as a patch containing 5% lidocaine. It exerts analgesic effect directly to the skin area in contact without causing local anaesthesia.4 It is well tolerated with minimal skin reactions (rash or redness at the application site) and insignificant systemic absorption, even with extended dosing.8–10 Therefore, the risk of drug interactions and systemic adverse effects is very low, making this a good alternative for patients who cannot tolerate systemic agents, in particular the elderly.8 The lidocaine patch is not yet available for use in Hong Kong.2,4

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The eutectic mixture of local anaesthetics (EMLA) is another useful topical agent that is easy to apply and is not associated with any major adverse effects.11 It contains 2.5% lidocaine and 2.5% prilocaine. The EMLA cream has been shown to be effective in the treatment of PHN.12–13 Other topical medications in neuropathic pain management include capsaicin (0.075%) and nonsteroidal anti-inflammatory drugs. There is variable evidence for the efficacy of these agents in PHN patients.14–15 Moreover, the unpleasant, burning sensation often associated with capsaicin is not tolerated by many patients.

Table. EFNS recommendations for drug treatments in neuropathic pain conditions

<table>
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<tr>
<th>Pain condition</th>
<th>First-line treatments</th>
<th>Second- or third-line treatments</th>
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*Includes systematic reviews of approved drug treatments

The EFNS task force has also made recommendations for the less studied neuropathic pain conditions, and proposes a number of new strategies for future trials that would allow objective comparisons of different pharmacological options for the management of neuropathic pain.

We continue our series on drugs for the treatment of neuropathic pain. Part 4 of the series examines evidence on topical agents for neuropathic pain.
Neuropeptides

A 67-year-old woman presented with intermittent paroxysmal sharp pain (sometimes provoked by touch) over the right frontal area for 2 months followed by sudden onset of right eye ptosis. She had constant numbness over her right upper face, and was nonresponsive to analgesics.

Pro-inflammatory cytokines

IL-1β, interleukin-1β; COX-2, cyclooxygenase-2

Second messenger systems

Nitric oxide – Sensitization of spinothalamic tract cells

Even though inflammatory pain and neuropathic pain have some common mechanisms leading to central sensitization (Figure), it is worth noting that some differences do exist. This will be apparent when we consider the two clinical entities separately.

In neuropathic pain, no targets have yet been identified in the central sensitization pathway. However, a number of therapeutic agents including anticonvulsants, antidepressants, topicals and tramadol act on sodium channels,

Tolosa-Hunt syndrome

Clinical examination revealed no rash or scar on the affected area of the face. However, the patient had impaired pinprick sensation over the right upper face. Brain CT scan was normal.

Management

Urgent brain CT and angiogram of the Circle of Willis were performed, and no abnormality was found. Blood tests were normal. MRI of the brain showed a small enhancing lesion at the right cavernous sinus (Figure 1). High-dose prednisolone (1 mg/kg/day) and gabapentin (1300 mg tid) relieved the paroxysmal sharp pain, but the unpleasant numbness persisted. The right front nerve palsy completely resolved after 6 weeks. Steroid therapy was then tapered off over the next 2 months. A follow-up brain MRI, 4 months later, showed substantial resolution of the enhancing lesion (Figure 2).

Discussion

Tolosa-Hunt syndrome is an uncommon cause of painful ophthalmoplegia and is characterized by prompt response to steroid therapy in patients with acute painful third nerve palsy. It is important to rule out the possibility of ischaemic ophthalmoplegia commencing arteriocy anemia with or without subarachnoid haemorrhage. Accurate diagnosis of Tolosa-Hunt syndrome relies on high quality MRI with contrast, as demonstrated in this case.

What is the role of cognitive behavioural therapy in treating neuropathic pain?

Cognitive behavioural therapy (CBT) is one of many nonpharmacological approaches to pain management and has been widely used for more than 30 years. It involves three basic components:

1. The first component helps patients understand that the pain experience can be affected by cognitions and behaviour, and stresses the important role patients can play in controlling their own pain.
2. The second component has been coping skills training. Patients are taught how to effectively cope with their pain through a variety of relaxation and cognitive techniques.
3. The third component of CBT encourages patients to apply and maintain the learned coping skills.

References