



Improving the management of neuropathic pain

Lee J, Nandi P. Improving the management of neuropathic pain.
Practitioner 2010;254 (1731): 27-30

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Practitioner
Medical Publishing Ltd

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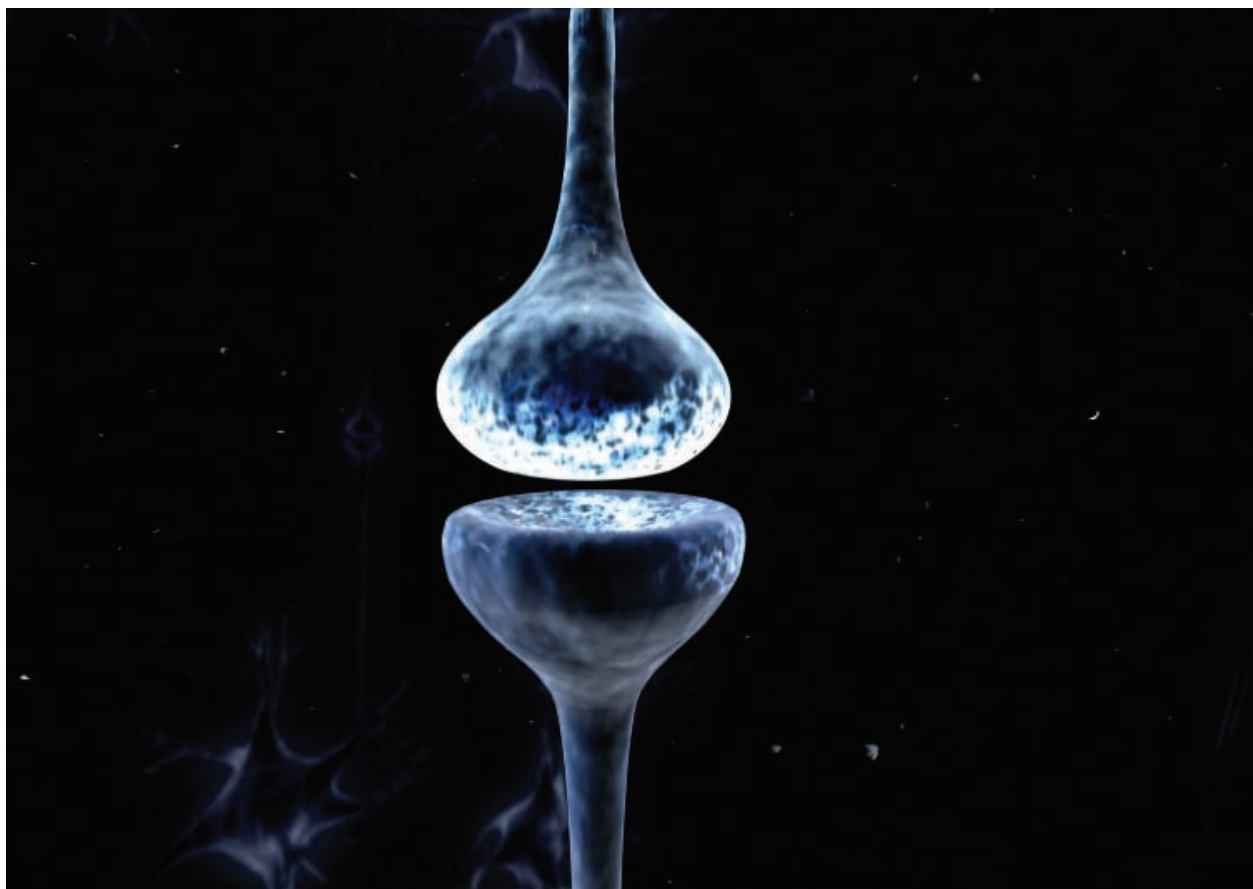
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What are the causes of neuropathic pain?

How should pain be diagnosed?

Which patients should be referred?



NEUROPATHIC PAIN IS DEFINED AS 'PAIN ARISING AS A DIRECT CONSEQUENCE OF A

lesion or disease of the somatosensory system'.¹ The damage or dysfunction can occur within any part of the somatosensory pathways of the nervous system; in the periphery, it may reflect a widespread neuropathic process (e.g. diabetic neuropathy) or a more focal disorder (e.g. peripheral nerve trauma or post-herpetic neuralgia). Similarly, central pain may arise from widespread or focal lesions.

Neuropathic pain arises from a

problem in the nervous system and is contrasted with nociceptive pain which is generated by the activation of thermal, mechanical or chemical nociceptors that cause or threaten tissue damage. The practical importance of recognising neuropathic pain (as distinct from nociceptive pain) lies in the difference in effective treatments.

It is also important to appreciate that the patient may be experiencing more than one type of pain. Post-herpetic neuralgia and painful diabetic neuropathy are recognised as conditions in which the fault lies within the

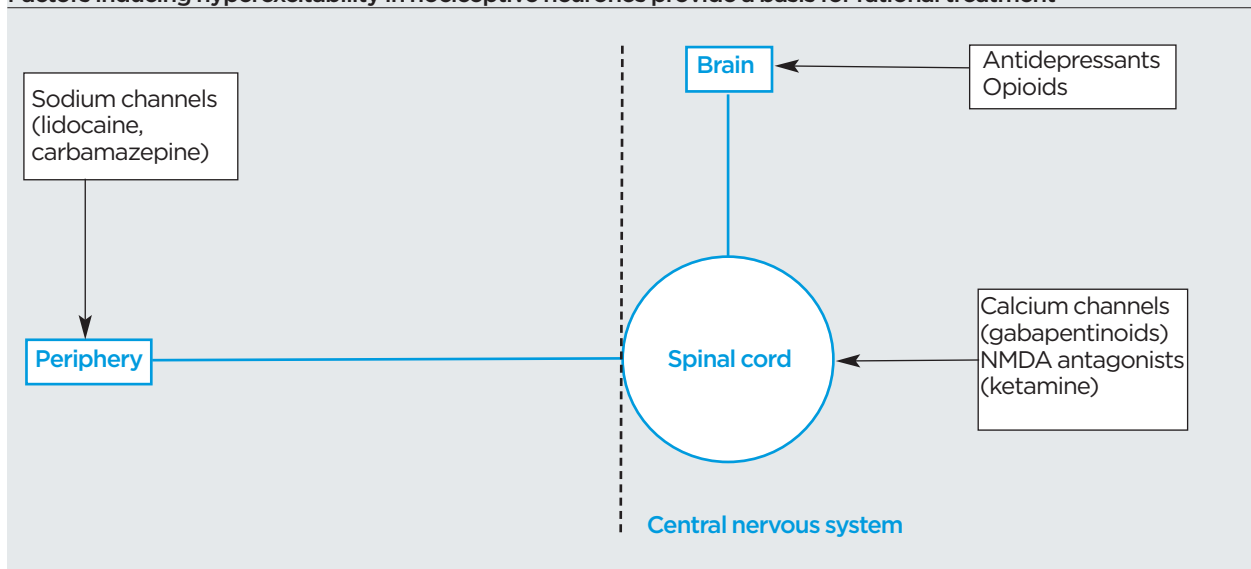
nervous system. However, many long-term disabling neurological disorders, such as multiple sclerosis, as well as causing neuropathic pain may also give rise to musculoskeletal pains which may be more readily amenable to treatment. Too often, pain problems which may involve a combination of mechanisms, are treated with strategies aimed at only one mechanism e.g. a patient with back pain and a lumbar radicular component may only be offered simple analgesia.

Neuropathic pain is relatively common. One large European



Figure 1

Factors inducing hyperexcitability in nociceptive neurones provide a basis for rational treatment



study found a prevalence of 6%.² The diagnosis and treatment of long-term pain has received considerable attention recently. Long-term pain is pervasive and costly. There is an interrelationship with psychosocial problems and there are often difficulties in clarifying the diagnosis.³ Most treatment for long-term pain, including neuropathic pain, should be provided at the primary care level, with support as necessary from specialist services.

CAUSES OF PAIN

Mechanisms for the generation of pain at cellular level are numerous. They are likely to exist in combination in any individual patient and are seldom, if ever, disease specific. However, clinical trials of drugs for neuropathic pain frequently test effect on a specific disease. It follows that primary diagnosis of a painful neurological disorder does not usually provide a clear guide to systemic drug treatment. Trigeminal neuralgia, however, is an exception to this general rule, with carbamazepine being the drug of first choice.

Some of the more important factors in inducing hyperexcitability in nociceptive neurones also provide a basis for rational treatment, see below and figure 1, above:

- abnormal expression of sodium channels (membrane stabilisers such as local anaesthetics and some anticonvulsants)

- abnormal expression of calcium channels (gabapentin and pregabalin)
- NMDA receptor activation (ketamine)

DIAGNOSIS

Patients often struggle to describe neuropathic pain. However, there are characteristic descriptors of neuropathic pain, many of which are included in the McGill Pain Questionnaire⁴ and other questionnaires designed specifically to identify neuropathic pain e.g. the LANSS Pain Scale,⁵ which has both a clinician-guided assessment and a self-guided patient report tool.

‘It is important to appreciate that the patient may be experiencing more than one type of pain’

Neuropathic pain is frequently, but by no means always, described as burning, shooting, tight or electrical. When taking the history it is important to elicit information about the site, duration, intensity and character of the pain (or pains, as there may be more than one pain phenotype in an individual patient). In addition, asking

about what precipitates the pain (although it is often spontaneous and unprovoked) and what relieves it can aid diagnosis. The presence of accompanying somatosensory disturbance in the painful territory is strongly suggestive of neuropathic pain and can take the form of:

- numbness
- allodynia (provocation of pain by normally innocuous stimuli such as light touch)
- hyperalgesia (exaggerated response to painful stimuli)
- paraesthesia
- dysaesthesia (other sensations not painful but unpleasant, e.g. insects crawling on the skin or formication).

Listed below are some examples of the different aspects of diagnosis that need to be considered:

- **Thinking beyond the obvious.** In someone with poorly controlled diabetes, establishing that leg pain is worse after sitting for an hour suggests a spinal problem rather than pain directly attributable to diabetic neuropathy or vascular insufficiency.
- **Recognising pathognomonic symptoms.** Intense allodynia e.g. intense pain with a cold breeze on the face in trigeminal neuralgia or the brush of clothes on a dermatome affected by post-herpetic neuralgia.
- **Awareness of associated clinical features.** Autonomic nervous system dysfunction may accompany neuropathic pain, and may manifest as nail bed changes, oedema, flushing or

Box 1

Treatment options for neuropathic pain

Non-specialist

Non-pharmacological

- social support
- psychological therapy
- physiotherapy
- occupational therapy
- acupuncture

Pharmacological

- topical (capsaicin, lidocaine)
- buccal, oral, rectal
- analgesics (paracetamol, NSAIDs, opioids)
- antidepressants (initially a tricyclic, then possibly others)
- anticonvulsants (usually carbamazepine for trigeminal neuralgia, gabapentin or pregabalin)
- transdermal (e.g. weak buprenorphine patches)

Specialist or pain clinic

Non-pharmacological

- group-based CBT
 - specialist one-to-one chronic pain physiotherapy and psychology
 - multiprofessional-based assessments and treatment planning
 - neuroaugmentation – nerve stimulation
- Implants such as spinal cord stimulators can reduce certain types of neuropathic pain. They are a major undertaking with a commitment to maintenance and support. A thorough work up before implantation is required; some centres use structured protocols including psychology sessions to prepare people adequately. The costs for each implant are in the order of £20,000 before adding ongoing costs. There is NICE guidance on spinal cord stimulation⁹

Pharmacological

- complex, potent or off-licence medication (e.g. cannabinoids, strong opioids whether oral or transdermal, other anticonvulsants)
- intravenous medication (e.g. lidocaine, ketamine)
- sympathetic blockade (multiple approaches e.g. i.v. phentolamine or ganglion blocks)
- implanted drug delivery systems (including spinal)

There are several reviews of treatment for neuropathic pain which non-specialists may find helpful.^{10,11}

other skin colour changes, or increased local sweating seen in complex regional pain syndrome.

As with all chronic pain conditions, sufferers of neuropathic pain are prone to adverse effects on mood, physical functioning and social activity, and their pain should be considered in the wider context of the biopsychosocial model. There are questionnaires that can provide more structured information on these aspects of the experience of pain such as:

- anxiety⁶
- fear avoidance (avoiding activities through fear of what will happen)⁷
- depression⁸

TREATMENT

The main categories of available treatment are shown in box 1, above.

Many doctors focus on the pharmacological management of neuropathic pain. In the early stages, this can be moderately successful. The natural history of many causes of

neuropathic pain means that there will also be spontaneous improvements. However, very long-standing pain is unlikely to respond dramatically to drug treatment, although there are occasional striking successes. Moreover, the side effects of drug treatments frequently limit their use.

Hence, it is important that patients with long-term neuropathic pain recognise the limitations of medical treatment and are discouraged from harbouring unrealistic expectations of cure. The following factors should be considered:

- Both the patient and GP should have a good understanding of the cause and prognosis of the long-term pain
- Continual assessment of patients on long-term medications is vital to ensure that the benefits of treatment outweigh the adverse effects
- Assisting the patient in obtaining social support and home adaptation as appropriate

Box 2

Guidelines for the management of neuropathic pain

- The CREST guidelines from Northern Ireland,¹² endorsed as an essential learning update by the RCGP, bring together several previously published guidelines in a synthesis of useful information.

www.rcgp.org.uk/pdf/CREST.pdf

- The NICE guidelines on the pharmacological management of neuropathic pain in adults in non-specialist settings¹³ give a step-by-step approach to managing neuropathic pain. They are aimed at GPs and non-specialist hospital doctors.

www.nice.org.uk/CG96

- Addressing psychosocial issues with support from adult mental health services in cases of overt anxiety and/or depression
- Provision of access to CBT, either individually or a group programme.

‘Too often, pain problems which may involve a combination of mechanisms, are treated with strategies aimed at only one mechanism’

There are two evidence-based guidelines which may be particularly useful to GPs see box 2, above.

REFERRAL

A specialist opinion should be sought in any case where the diagnosis is uncertain, or the patient's condition is rapidly deteriorating or uncontrolled. This may be a specialist in a particular condition, to address issues of primary diagnosis, or a specialist in pain medicine to advise on, or provide, further treatment. »

key points

SELECTED BY

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Neuropathic pain is defined as 'pain arising as a direct consequence of a lesion or disease of the somatosensory system'. It may reflect a widespread neuropathic process (e.g. diabetic neuropathy) or a more focal disorder (e.g. post-herpetic neuralgia). The practical importance of recognising neuropathic pain (as distinct from nociceptive pain) lies in the difference in effective treatments.

It is important to appreciate that the patient may be experiencing more than one type of pain. Many long-term disabling neurological disorders, such as multiple sclerosis, as well as causing neuropathic pain, may also give rise to musculoskeletal pains which may be more readily amenable to treatment. Most treatment for long-term pain, including neuropathic pain, should be provided in primary care, with support from specialist services.

Mechanisms for the generation of pain at cellular level are numerous. They are likely to exist in combination in any individual patient and are seldom, if ever, disease specific. Primary diagnosis of a painful neurological disorder does not usually provide a clear guide to systemic drug treatment. Some of the more important factors in inducing hyperexcitability in nociceptive neurones also provide a basis for rational treatment.

Neuropathic pain is frequently, but by no means always, described as burning, shooting, tight or electrical. When taking the history it is important to elicit information about the site, duration, intensity and character of the pain, or pains, and what precipitates pain and what relieves it. The presence of accompanying somatosensory disturbance in the painful territory is strongly suggestive of neuropathic pain and can take the form of: numbness; allodynia; hyperalgesia; paraesthesia and dysaesthesia.

Sufferers of neuropathic pain are prone to adverse effects on mood, physical functioning and social activity, and their pain should be considered in the wider context of the biopsychosocial model. Many doctors focus on the pharmacological management of neuropathic pain. In the early stages, this can be moderately successful. The natural history of many causes of neuropathic pain means that there will also be spontaneous improvements. However, very long-standing pain is unlikely to respond dramatically to drug treatment.

A specialist opinion should be sought in any case where the diagnosis is uncertain, or the patient's condition is rapidly deteriorating or uncontrolled. This may be a specialist in a particular condition, to address issues of primary diagnosis, or a specialist in pain medicine to advise on, or provide, further treatment. Patients who are struggling with their pain are repeat clinic attendees. They may have had many specialist referrals without clear benefit and a long list of medications. Their mood is often low. These patients are best served by specialist centres that can endeavour to explain the condition and encourage self-management.

One condition that requires special mention is complex regional pain syndrome (CRPS) which now encompasses the two formerly used terms, causalgia and reflex sympathetic dystrophy. There is some evidence that more rapid intervention can affect the long-term outcome.¹⁴ Patients with suspected CRPS should be referred straightaway.

While comparable data on other forms of neuropathic pain are lacking, epidemiological data on other disabling chronic pain (particularly low back pain) suggest that the likelihood of persisting failure to return to employment increases the longer the problem is left unaddressed.

Pending the acquisition of more robust data on neuropathic pain, it would seem prudent to instigate non-specialist treatments for neuropathic pain promptly, and refer early those patients failing to respond.

'Sufferers of neuropathic pain are prone to adverse effects on mood, physical functioning and social activity'

Patients who are struggling with their pain are repeat clinic attendees. Frequently, they have had many specialist referrals without clear benefit and a long list of medications. Their mood is often low. These patients are best served by specialist centres that can endeavour to explain the condition and encourage self-management. A frequent stumbling block is the lack of provision of services which address cultural barriers.

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Useful information

The British Pain Society provides useful articles and web links for both clinicians and patients
www.britishpainsociety.org.uk

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