

UPDATE

Module 1696

This module covers:

- Causes and symptoms of neuropathic pain
- Management of neuropathic pain and side effects of treatment
- How community pharmacists can support patients with neuropathic pain

April >>

Neurology month

● Neuropathic pain	April 5
● Epilepsy	April 12
● Alzheimer's disease	April 19
● Sleep disorders	April 26*

*Online-only for Update and Update Plus subscribers

Neuropathic pain

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Neuropathic pain is a complex condition that can be both difficult to diagnose and challenging to treat. It is an umbrella term for the pain caused by damage to, or pathological changes in, the peripheral or central nervous system.

Neuropathic pain can be caused by a variety of disease processes, from herpes infections, diabetes and cancer to disc prolapse, stroke and Parkinson's disease. It is estimated to affect between 6 and 8 per cent of people and the prevalence rises with age and severity of the underlying condition. For example, between 16 per cent and 26 per cent of diabetics experience painful diabetic neuropathy, while up to 18 per cent of people who have had herpes zoster report some neuropathy one month after the appearance of a rash.

The most common presentations are neuropathic back pain with radiating pain to the arm or leg and post-traumatic neuropathic pain following an accident or surgery. For every 1,000 patients registered with a GP, about 60 to 80 will have symptoms of chronic neuropathic pain, and about half of these patients will require medication and regular support.

What is neuropathic pain?

Broadly speaking there are two types of pain: nociceptive and neuropathic. We have all experienced nociceptive pain – it is the acute, sharp or aching pain caused by a cut, sprain or burn, or when there is pressure on the body either from outside or inside, such as from a tumour.

Pain in these situations acts as a warning signal of tissue damage or the risk of tissue damage. It is transmitted from the site of injury by nerve endings, through the spinal cord and to the brain.

Nociceptive pain tends to be self-limiting, with the pain receding as the injury heals. It responds well to conventional analgesia with



Nerve damage suffered during an amputation can lead to phantom limb pain, a type of neuropathic pain

paracetamol, NSAIDs, codeine and morphine.

In contrast, neuropathic pain occurs when the neurons themselves have been injured and the pathways for transmitting pain signals in the central nervous system have been disrupted. There is no stimulus in neuropathic pain as there is in nociceptive pain and the prognosis is worse, with the pain often becoming chronic.

The disruption of neurological pathways that leads to neuropathic pain involves a number of neurotransmitters and other substances. This may explain why neuropathic pain is less likely to be helped by conventional analgesics but can respond to drugs used to treat other

neurobiological disorders such as depression and epilepsy.

Many conditions can cause nerve damage leading to neuropathic pain, including:

- cancer (pain can follow chemotherapy, compression from tumours or be a result of tumour antigens)
- diabetic neuropathy
- trigeminal neuralgia
- HIV infection
- postherpetic neuralgia
- amputation (phantom limb pain)
- post-traumatic neuralgia (such as nerve root compression)
- disc prolapse

- stroke
- alcoholism
- spinal cord injury
- multiple sclerosis
- Parkinson's disease.

The main symptoms of neuropathic pain are pain with no obvious cause (no injury) and abnormal responses to touch or stimuli that would not normally cause pain. Patients may complain of unpleasant and strange sensations on the skin, such as tingling and pins and needles (dysaesthesia). Others may describe their pain as a deep-seated gnawing pain or they may say they have a burning sensation, or feel very hot or ice cold. Some patients describe shooting pains, stabbing sensations, and electric shocks, although this is less common. Patients may also say that a very light touch, such as a brush of clothes or a cold draught of air, is intensely painful.

Neuropathic pain may present within a few days of nerve damage or take many months to develop. It can lead to disturbed sleep, anxiety and depression, and have a significant impact on physical and mental wellbeing. The ability to carry out everyday tasks, to work and to take part in leisure activities can also be severely curtailed. It is not known how much neuropathic pain costs society, but it is likely to be substantial. A study in Germany recently estimated that the annual cost of just one type of neuropathic pain – lower back neuropathy – was about £6.4 billion.

There is no specific test for neuropathic pain and diagnosis is made based on clinical judgement after taking a thorough history. A doctor may also try to identify altered sensations in a painful area by lightly stroking the skin with cotton wool or doing a pin-prick test.

Pain in response to a light touch that would not normally cause discomfort (allodynia), numbness (hypoalgesia) or an exaggerated painful response (hyperalgesia) are all common characteristics of neuropathic pain.

Management of neuropathic pain

Treating neuropathic pain requires balancing the benefits and adverse effects of available drugs and treating the underlying condition. It may be possible to reduce the impact of neuropathic pain caused by diabetes, for example, with better glycaemic control.

● First-line treatments

Tricyclic antidepressants have been used for many years to treat neuropathic pain and they remain popular largely because they are inexpensive. Nice recommends amitriptyline, which is used off-label, for the treatment of neuropathic pain. It should not be used in patients taking fluoxetine, paroxetine or celecoxib. Other tricyclic antidepressants may also be used; nortriptyline, for example, is often better tolerated than amitriptyline, although it is not recommended by Nice.

Newer antidepressants recommended for neuropathic pain include duloxetine, which is licensed for diabetic neuropathy. Duloxetine should not be used in patients taking codeine or tamoxifen. Venlafaxine is not licensed for neuropathic pain but is often used when duloxetine is not effective. These newer antidepressants have a better side-effect profile than tricyclics and may be more suitable for older patients.

Antiepileptics, such as gabapentin and pregabalin, are licensed for the treatment of peripheral neuropathic pain and peripheral and central neuropathic pain, respectively. They have few drug interactions but there is growing concern that pregabalin has the potential to be abused, possibly related to side effects such as euphoric mood.

Carbamazepine is licensed for treating trigeminal neuralgia and is recommended by Nice for this indication as the drug of choice prescribed in primary care. Oxcarbazepine, a derivative of carbamazepine, has shown similar efficacy to carbamazepine and may be prescribed by specialists for trigeminal neuralgia. It may be better tolerated than carbamazepine with fewer drug interactions. Baclofen and lamotrigine are alternative drugs for those patients who cannot tolerate carbamazepine or oxcarbazepine.

Topical lidocaine is licensed for post-herpetic neuralgia while topical capsaicin is licensed for post-herpetic neuralgia (0.075 per cent strength cream) and peripheral pain in non-diabetics (8 per cent strength cream). None of these products is recommended by Nice but they may be helpful in the management of small areas of localised pain.

There is no guidance on the order in which these drugs should be tried and which drug is tried first is probably down to the experience of the individual prescriber. Nice recommends trying amitriptyline, duloxetine, gabapentin or pregabalin and switching between them if pain relief is inadequate or the drug cannot be tolerated.

The dose should be titrated gradually while the effects on pain and adverse effects are closely monitored. If effective pain relief is not achieved within about four to six weeks a review of medication is usually recommended. All the options should be tried before moving on to second-line treatment.

● Side effects and dose titration

To achieve the best relief at the lowest dose, treatments for neuropathic pain tend to be titrated gradually over a number of weeks. For this reason patients need to be advised that the full effects of their treatment may not be evident for a few weeks and that they should carefully follow the dosing instructions from their doctor.

The main adverse effects of the treatments used to treat neuropathic pain include dry mouth, postural hypotension, dizziness, ▶

Neuropathic pain is estimated to affect 15 per cent of the UK population.

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changes in appetite, daytime drowsiness and nausea. Patients should be encouraged to stick with their medication and advised that these effects should subside with time.

There may be some changes that patients can make to their dosing schedules to help them cope with these effects. For example, taking amitriptyline two hours before bedtime can help to minimise the side effects associated with this drug. If daytime sleepiness is a particular problem it may be possible to have a lower day time dose and a higher night time dose, provided that adequate pain relief is achieved during the day.

● Second-line treatment

If patients have tried high doses of all of the above drugs and either cannot tolerate them or find they are not sufficiently effective, they may be prescribed lower doses of two different agents – an antidepressant and antiepileptic. However, there is little research on the use of combinations for neuropathic pain.

Opioids, such as codeine and tramadol, are often used for acute neuropathic pain, although there is no evidence that it is beneficial in the longer term. But they may be used in combination with one of the first-line agents if pain appears intractable.

Patients who find little relief from combination treatment may be referred for psychological intervention, such as cognitive behavioural therapy, stress management or counselling for anxiety, or physiotherapy. Pain management programmes may be an option for patients with long-term chronic pain.

Nice recommends spinal cord stimulation as a treatment option for patients who have had neuropathic pain for at least six months, despite treatment with conventional drug approaches or if they have previously benefited from a trial of stimulation in terms of pain control. Spinal cord stimulation involves an operation to fit a small device inside the body that delivers electrical impulses to the spinal cord. It is designed to change the way a person perceives pain by stimulating certain neurological pathways.

There is some evidence that it may alter the local neurochemistry and play down some of the hyperexcitability of some neurons. Nice says that this treatment should be delivered only as part of a clinical trial and by a team experienced in the management of chronic pain.

There is no good evidence that acupuncture, transcutaneous electrical nerve stimulation (TENS) or homoeopathy are effective in neuropathic pain. However, patients may find some of the approaches helpful and seek to fund them.

The role of the pharmacist

One of the key roles of community pharmacists helping patients with neuropathic pain is managing their expectations. Unfortunately



Neuropathic pain occurs when neurons have been injured and pain pathways have been disrupted

there is no magic bullet for treating neuropathic pain and finding the right dose of the drug that helps someone maintain their quality of life can take a number of changes in medication.

There are many drugs available for treating neuropathic pain, and it is important that patients work with their doctor and pharmacist to find the dose or combination of drugs that works best for them. This means keeping a close check on adverse effects and monitoring carefully the level of pain from day to day. It is probably true to say that an effective treatment for neuropathic pain is one that allows a person to keep enjoying life and do the things they were doing before the onset of pain but complete relief from pain is only rarely achieved.

As ever, pharmacists should emphasise the importance of physical and emotional aspects of chronic disease management by encouraging patients to take good care of any underlying health conditions, to keep active with regular physical exercise, and to try to ensure good sleep. It is also important that any depression or anxiety is addressed.

Resources for patients

- Action on Pain offers support and advice for people affected by chronic pain at action-on-pain.co.uk
- Pain Concern provides information about pain management and raises awareness about the issues affecting people who live with pain at painconcern.org.uk
- Facial Pain Association (formerly the Trigeminal Neuralgia Association) at fpa-support.org (registration is needed for free access)

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5 minute test

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Take the 5 Minute Test

1. Diseases causing neuropathic pain include herpes infections, diabetes and Parkinson's.

True or false?

2. Neuropathic pain is estimated to affect 15 per cent of the UK population.

True or false?

3. Neuropathic pain can be caused by the pathways for transmitting pain signals being damaged or disrupted.

True or false?

4. Amitriptyline is licensed for use in diabetic neuropathy.

True or false?

5. Duloxetine should not be used in patients taking codeine or tamoxifen.

True or false?

6. Venlafaxine is not licensed for neuropathic pain, but is often used if duloxetine has not been effective.

True or false?

7. Side effects of antidepressants used for neuropathic pain include dry mouth, postural hypotension, daytime drowsiness and nausea.

True or false?

8. Carbamazepine is licensed for treating trigeminal neuralgia.

True or false?

9. NICE recommends nortriptyline for the treatment of neuropathic pain.

True or false?

10. NICE does not recommend spinal cord stimulation as there is little evidence to support its use.

True or false?

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Tips for your CPD entry on neuropathic pain

Reflect What are the most common causes of neuropathic pain? How might a patient with neuropathic pain present? Which drugs does NICE recommend for the treatment of neuropathic pain?

Plan This article describes neuropathic pain and includes information about how it differs from nociceptive pain and its symptoms and diagnosis. The recommended drug and non-drug treatments are discussed, along with their side effects, as well as the advice and support pharmacists can give to patients.

Act Read the Update article and the suggested reading (below), then take the 5 Minute Test (above). Update and Update Plus subscribers can then access their answers and a pre-filled CPD logsheet at chemistanddruggist.co.uk/mycpd.

Find out more about neuropathic pain from the patient.co.uk website

tinyurl.com/neuropathic11

tinyurl.com/neuropathic12

Revise your knowledge of trigeminal neuralgia from the NHS Choices website
tinyurl.com/neuropathic13

Read the guide to managing pain on the Pain Concern website, which contains advice to help people understand and manage their pain
tinyurl.com/neuropathic14

Find out about support groups for people suffering from chronic pain in your area

Evaluate

Do you feel confident in your knowledge of neuropathic pain and its management? Could you give support and advice about treatments to patients?

ASK THE EXPERT

April is neurology month and our expert is on hand to answer your queries. From neuropathic pain to Alzheimer's disease, submit your questions by email: pooja.sisodia@ubm.com

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