

Management of Neuropathic Pain for Adults in Primary Care

SCOPE

This prescribing guideline is to assist primary care prescribers in treating patients with neuropathic pain BEFORE referral to specialist services.

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NEUROPATHIC PAIN TREATMENT PATHWAY

Pharmacological Management

- See page 4 for information regarding realistic expectation of pharmacological management.
- Ensure adequate doses are trialled for a long enough time before moving to the next step. Do not continue ineffective treatment i.e. use “short sequential trials” or “one medication at a time”.
- Document baseline and set desired treatment out- comes prior to initiating therapies.
- See table on page 8 or refer to BNF and/or SPC for adverse effects and contraindications for specific medications.

Non-pharmacological treatment options

- Address common psychological co-morbidities (e.g. anxiety/depression), consider referring/signposting to psychological therapies such as cognitive behavioural therapy *
 - If sleep is disturbed discuss [sleep restoration strategies](#) *
 - Physiotherapy
 - Interventional approaches such as surgery
- * Please see Clinicians Resources on page 9 for more information/options.

For **neuropathic pain** offer a choice of either: Amitriptyline, Duloxetine, Gabapentin or Pregabalin as initial treatment.
Review at 6-8 weeks.

If the initial treatment is not effective or is not tolerated, offer one of the remaining 3 drugs, and consider switching again if the second drug tried is also not effective or not tolerated

Has there been a significant decrease in pain AND substantial increase in physical function?

NO **STOP and try options below**

YES

Maintain on medication and dose that is working.
Review regularly

Refer patient to specialist at any stage – where the diagnosis is in doubt or patient is not responding to treatment.

For **trigeminal neuralgia** offer Carbamazepine
Review at 6-8 weeks.

Has there been a significant decrease in pain AND substantial increase in physical

NO

YES

Consider Referral to Specialist Pain Management Service

Other pharmacological treatment options to consider:

Nortriptyline – only use if amitriptyline effective but not tolerating side effects; off-label indication. Review at 6-8 weeks.

Tramadol - Consider tramadol only if acute rescue therapy is needed. Review after 4 weeks.

Capsaicin 0.075% cream – for localised pain due to post herpetic neuralgia.

*Lidocaine 5% medicated plasters- for localised neuropathic pain due to post herpetic neuralgia (PHN). **Specialist pain team recommendation only.**

Has there been a significant decrease in pain AND substantial increase in physical function?

YES

NO

UNDERSTANDING NEUROPATHIC PAIN

Neuropathic pain is very different from inflammatory pain. Whilst nociceptive pain is produced by tissue damage neuropathic pain is caused by a lesion or disease affecting the somatosensory nervous system which can result from nerve damage caused by trauma or certain conditions.

HOW COMMON IS NEUROPATHIC PAIN?

- Neuropathic pain is a common condition affecting between 6% and 8% of the population.
- An average GP may have between 35 and 70 patients with neuropathic pain.
- Much neuropathic pain can be successfully managed within primary care.

RECOGNISING AND DIAGNOSING NEUROPATHIC PAIN

Common causes of neuropathic pain:

- Diabetes Mellitus (type 1 and 2)
- Shingles (Herpes Zoster)
- Trigeminal Neuralgia
- Post-Surgery e.g. post hernia repair
- Chronic spinal problems e.g. sciatica, neck pain, low back pain
- Underlying malignancy or other occult disease

Consider referring patient to specialist setting if:

- The patient is experiencing severe pain.
- Neuropathic pain is significantly limiting participation in daily activities (including self-care, general tasks and demands, interpersonal interactions and relationships, mobility, and sleeping).
- The underlying health condition that is causing neuropathic pain has deteriorated.

Emergency	Urgent	Non-Urgent
Cauda equina syndrome	Infection	Metabolic causes e.g. alcohol excess or vitamin deficiency
	Cancer	Phantom limb pain
	Trauma	Post-surgery
		Medication toxicity e.g. chemotherapy
		Idiopathic

Possible initial investigations if cause in doubt:

ESR, CRP, fasting glucose, glucose tolerance test, LFTs, FBC, Vitamin B₁₂ & folate, U&Es, TFTs

Symptoms and signs of neuropathic pain:

- Can be spontaneous or evoked; continuous or intermittent.
- Is often worse at the end of the day.
- Can be exacerbated by heat, cold or external stimulation - even simply wearing clothes or bed sheets.

History

- Listen to the person's pain story; this will help you to get a clear understanding of the person you are working with.
- Neuropathic pain may be characterized by unpleasant symptoms, such as: shooting or burning pain, altered sensation, sensations (e.g. pins and needles) that are very difficult to describe or numbness
- However, many pains, including pain arising from classically "non-neuropathic" conditions (e.g. osteoarthritis or cancer pain), can have neuropathic characteristics.
- Pain that is unresponsive to conventional analgesics (paracetamol, NSAIDs and weak opioids) may have neuropathic elements.
- Consider use of a validated questionnaire (e.g. S-LANSS or Pain Detect, see resources for clinicians) to aid diagnosis of neuropathic pain.
- The Brief Pain Inventory (see resources for clinicians) is useful to assess pain intensity and the impact that the pain is having on daily living.

Sensory signs

- Allodynia - pain produced by an innocuous stimulus e.g. touch, pressure, warmth
- Dysaesthesia - an unpleasant, abnormal sensation
- Hyperaesthesia - an increased sensitivity to touch
- Hyperalgesia - an increased response to a stimulus which is normally painful

Associated symptoms and signs

- Reduced activity (65%)
- Poor sleep (60%)
- Depression (34%)
- Anxiety (25%)

PREVENTION & EARLY MANAGEMENT OF NEUROPATHIC PAIN

- **Diabetes** - Ensure optimal glycaemic control to minimise peripheral diabetic neuropathy.
- **Herpes zoster** - Neuropathic pain medicines given in the acute phase may reduce post-herpetic neuralgia but are unproven.

MANAGEMENT

- Management of neuropathic pain should use a holistic biopsychosocial model that also addresses underlying psychological and social issues.
- If the diagnosis is uncertain consider early referral to a specialist.

MANAGING EXPECTATION OF PHARMACOLOGICAL TREATMENTS

- It is essential that prescribers and patients have realistic expectations for treatment.
- Development of self-management skills (see [Pain Toolkit](#)) in combination with pharmacological treatment options is essential.
- Shared treatment outcomes (reduction in pain intensity or pain relief and functional outcomes) should be agreed and documented prior to initiation of treatments for neuropathic pain.
- Analgesics for neuropathic pain are unlikely to provide complete pain relief, however a successful trial should provide at least 50% reduction in pain intensity.
- Those patients who do gain good pain relief often experience improvements in other physical and psychological domains (e.g. sleep, mood, quality of life).
- Effects are unlikely to be noticeable for up to two weeks after initiation but the maximum benefit may not be observed until 6-8 weeks, however patients may experience side effects much sooner.
- Most side effects are relatively minor and will resolve if the patient is able to persist in taking for the medicine several weeks.
- Reassessment of effectiveness by a gradual dose reduction at least once a year is advised to ensure that medicines are continuing to provide benefit.

IMPROVING CONCORDANCE

- Explain the reason and rationale for treatment choices.
- Explain commonly used medicines (e.g. antidepressants and antiepileptics) may be used for other conditions.
- Explain common side effects.
- Explain timescale expected for improvement and possible next step.
- Provide patient with an information [leaflet](#) about persistent pain and/or about medicines for neuropathic pain (please see resources for Clinicians).

REVIEW

- Patients should be followed closely to review diagnosis and ensure that the treatment is titrated to the response.
- At each review consider: the diagnosis, efficacy and tolerability of medication and whether the dose adjustment is required.
- Once stabilised on treatment patients should be reviewed at least annually.
- The Brief Pain Inventory in appendix 1 is a useful tool to monitor the effect of management.
- Refer patient to specialist at any stage – where the diagnosis is in doubt or patient is not responding to treatment.

CAUTIONS WITH NEUROPATHIC PAIN THERAPIES

- Use pain medicines with caution in patients who are frail, elderly or who have cardiac disease.
- Many medicines recommended are not licensed for the treatment of neuropathic pain.
- Opioids should be used on specialist recommendation only (except for tramadol when prescribed as acute rescue therapy) and as part of comprehensive management plan. Refer to the [APC guidance on the use of opioids for persistent non-cancer pain](#) and the Faculty of Pain Medicine [Opioids Aware](#) resource.
- Cases of Gabapentin and pregabalin misuse are increasing. Use both with caution for patients with a personal or family history of substance or alcohol misuse.
- MHRA Drug Safety Update published on 18 February 2021 advised that special precaution should be taken for patients' co-prescribed opioid and pregabalin at doses exceeding 300mg a day, as they are at an increased risk of death due to respiratory depression.
- Gabapentin — rare risk of severe respiratory depression even without concomitant opioid medicines (ref: MHRA Oct17). Patients at higher risk are those with compromised respiratory function, respiratory or neurological disease, renal impairment, concomitant use of central nervous system (CNS) depressants, and elderly people. Dose adjustments might be necessary in these patients. Note that this could be a class effect and pregabalin may prove to have a similar effect on respiratory function.
- Risk of opioid related death increased with gabapentin and concomitant opioids (ref: [GomesT at al](#)).
- Carbamazepine - MHRA safety update published in January 2021 on increased risk of major congenital malformations associated with use of antiepileptic drugs during pregnancy. More information can be found [here](#).
- Other physical treatments (e.g. TENS, acupuncture, physiotherapy) may be beneficial.
- TENS only works while the machine is operational but may provide relief for short periods.

PHARMACOLOGICAL OPTIONS FOR MANAGEMENT OF NEUROPATHIC PAIN

Gabapentinoids – both pregabalin and gabapentin go through minimal first-pass metabolism and therefore are eliminated unchanged in the urine. Renal impairment will consequently decrease gabapentinoids elimination and result in potential drug accumulation. It is a good practice to review (at least twice per annum) patients with declining kidney function known to be using gabapentinoids regularly. Manufacturer advises adjusting the dose of gabapentin and pregabalin in line with creatinine clearance level (ml/min).

The plasma level of gabapentin does not increase proportionally with dose increase – this means that the risk of side effects is higher when high doses are taken. Moreover, bioavailability of gabapentin falls from 60% to 33% as the total daily dosage increase from 900mg to 3600 mg. For safety reasons the Nottinghamshire APC guideline recommends that the maximum daily dose of gabapentin should NOT exceed 1800mg.

Gabapentin in renal impairment (ref: Neurontin SPC):

Creatinine Clearance (ml/min)	Dose
≥80	300mg TDS to 600mg TDS
50-79	200mg TDS to 600mg TDS
30-49	100mg TDS to 300mg TDS
15-29	300mg every other day to 200mg TDS
<15*	300mg every other day to 100mg TDS

*For patients with creatinine clearance <15 mL/min, the daily dose should be reduced in proportion to creatinine clearance (e.g., patients with a creatinine clearance of 7.5 mL/min should receive one-half the daily dose that patients with a creatinine clearance of 15 mL/min receive).

Suggested fast up-titration for Gabapentin:

Week 1		Week 2		Week 3
Day 1 to 2	300mg OD	Day 1 to 2	300 mg morning 300 mg midday 600 mg at night	600 mg three times daily. Continue on this dose for further 2-3 weeks and review.
Day 3 to 4	300mg BD	Day 3 to 4	300 mg morning 600 mg midday 600 mg at night	
Day 5 to 7	300mg TDS	Day 5 to 7	600 mg three times daily	

Consider slower increase in dose of gabapentin when patient presents symptoms of milder pain, they are elderly or have renal impairment. Also patients who are known to be sensitive to new medicines should follow slower titration process.

Pregabalin in renal impairment (ref: Lyrica SPC):

Creatinine clearance (ml/min)	Dose regimen Maximum dose (mg/day)
≥ 60	300mg BD or 200mg TDS
≥ 30 - < 60	150mg BD or 100mg TDS
≥ 15 - < 30	150mg OD or 75mg BD
< 15	75mg OD

Suggested up-titration for Pregabalin:

	Week 1	Week 2	Week 3
Morning	75 mg	150 mg	300 mg
Evening	75 mg	150 mg	300 mg

Time for full response to treatment with gabapentinoids is usually 4-8 weeks. If found of little benefit to the patient, the dose should be tapered gradually. For gabapentin doses lower than 900mg a day reduce the total daily dose by 100mg every 4 days; for doses above 900mg reduce the total daily dose by 300mg every four days. Pregabalin should be tapered down by 50 to 75mg per week.

Serotonin-Norepinephrine Reuptake Inhibitor (SNRI) – Duloxetine

SNRIs have been associated with dose-related, often sustained increases in both systolic and diastolic blood pressure. Use with caution in patients whose underlying conditions that might be compromised by increases in blood pressure and heart rate.

Recommended monitoring:

- Baseline blood pressure (BP) measurement before starting treatment. If BP is raised (systolic >140mmHg or diastolic >90mmHg) this should be managed in line with current hypertension guidelines.
- Hypertension must be controlled before starting SNRI treatment.
- Monitor BP after initiation of treatment, after any subsequent dose increases, or initiation of other medicines associated with hypertension. If the patient has an approved home monitoring BP device this may be sufficient.
- Consider the following options if there is evidence of sustained hypertension (depending on the magnitude of the increase, patient response to treatment, general medical status): dose reduction or withdrawal, optimise or initiate antihypertensive treatment, reduction or withdrawal of any other current medications associated with hypertension.

PAIN MEDICINES AND DRIVING

All clinicians should discuss a risk of pain medicines and impairment of driving skills. Useful information can be found on website of Faculty of Pain Medicine(see [Driving and Pain](#)) as well as on [DVLA website](#).

Medicine	Typical daily starting dose	Maximum daily dose	Comments	Duration of adequate trial
TRICYCLIC ANTIDEPRESSANTS				
<u>Amitriptyline</u>	10 – 25 mg at night	75 mg at night	Take 90 – 120 minutes before going to bed. Response normally evident at 75 mg daily, however doses up to 150 mg at night may be used to optimise response. Do not stop abruptly – gradually titrate down.	6 – 8 weeks with at least 2 weeks at maximum tolerated dose
<u>Nortriptyline</u>	10 mg at night	75 mg at night	Take 90 – 120 minutes before going to bed. Increase gradually; higher doses to be given under specialist supervision. The dose should preferably be reduced gradually over about 4 weeks. OFF-LABEL USE.	6 – 8 weeks with at least 2 weeks at maximum tolerated dose
ANTIEPILEPTICS				
<u>Carbamazepine</u>	100 mg twice daily	200 mg four times a day	For initial treatment of trigeminal neuralgia . Increase slowly to 200mg 2-4times daily. Avoid sudden withdrawal - gradually titrate down.	6 – 8 weeks with at least 2 weeks at maximum tolerated dose
<u>Gabapentin</u>	300 mg at night	600 mg three times a day	See page 6 or BNF for suggested titration regimen. Side effects worst at times of dose increase. Do not stop abruptly – gradually titrate down.	3 – 8 weeks for titration plus two weeks at maximum dose
<u>Pregabalin</u>	75mg twice daily	300mg twice daily	See page 7 or BNF for suggested titration regimen. Only if gabapentin ineffective or not tolerating gabapentin. Do not stop abruptly –gradually titrate down.	4-6 weeks
SNRI				
<u>Duloxetine</u>	30mg once daily for 2 weeks then increase to 60mg once daily	120mg once daily or in two divided doses	Licensed for diabetic neuropathy only. <u>Blood pressure monitoring recommended in patients with known hypertension and/or other cardiac disease, especially during first month</u> Avoid in severe renal impairment (CrCl<30ml/min). Avoid abrupt withdrawal (withdraw slowly over min. of 1 to 2 weeks). Risk of serotonin syndrome if used concomitantly with other serotonergic agents.. May have small increase in fasting glucose / HbA1c. May increase LFTs. The plasma concentration of duloxetine displays large inter-individual variability. Hence, some patients that respond insufficiently to 60 mg may benefit from a higher dose (max 60mg BD).	8 weeks
OPIOIDS				
<u>Tramadol</u>	50 – 100 mg four times a day	100 mg four times a day	Consider tramadol for short periods only. Increased risk of seizure /serotonin syndrome when used in conjunction with TCA or SSRI. May cause less respiratory depression and constipation than other opioids.	4 weeks
TOPICAL AGENTS				
<u>Capsaicin</u>	0.075%	3 – 4 times daily	For post herpetic neuralgia. Care on application (see patient information leaflet). Counseling required. Review at 8 weeks and only continue if benefit is seen.	8 weeks
<u>Lidocaine 5% medicated plasters</u>	One plaster (can be cut)	Three plasters	Amber 2 - on Pain Management Service recommendation only for localized neuropathic pain due to post herpetic neuralgia (PHN) only where oral treatments and capsaicin have been ineffective or are contraindicated. Red- for other conditions may only be prescribed in exceptional circumstances and by pain specialist prescribers. Up to three plasters to be applied for 12 hours each day. Review after 4 weeks. If no significant decrease in pain or substantial increase in physical function then it should be stopped.	4 weeks

RESOURCES FOR CLINICIANS AND PATIENTS

RESOURCE NAME	RESOURCE DESCRIPTION AND WEBSITE ADDRESS
NICE - Neuropathic pain in adults: pharmacological management in non-specialist settings (CG 173)	This guideline covers managing neuropathic pain (nerve pain) with pharmacological treatments (drugs) in adults in non-specialist settings. https://www.nice.org.uk/guidance/cg173
APC local guidelines for primary care within NHS Nottingham and Nottinghamshire CCG	https://www.nottsapc.nhs.uk/guidelinesformularies/
British National Formulary Online	https://bnf.nice.org.uk/
Live Well with Pain	An online resource for GPs and pain specialists to help increase skills and confidence in working with people who live with persistent pain. https://livewellwithpain.co.uk/
Opioids Aware	A resource for patients and healthcare professionals to support prescribing of opioid medicines for pain. https://www.fpm.ac.uk/opioids-aware
MHRA Drug safety updates	https://www.gov.uk/drug-safety-update
Moving Medicine	A useful resource to help healthcare professionals integrate physical activity conversations into routine clinical care. https://movingmedicine.ac.uk/
Faculty of Pain Medicine - PILs	Patient information leaflets on medications and interventions commonly used to treat persistent pain https://fpm.ac.uk/patients/patient-info
Pain Toolkit	https://www.paintoolkit.org/
Brief Pain Inventory	Screening Questionnaire http://www.npcrc.org/files/news/briefpain_short.pdf
Pain DETECT questionnaire	painDETECT-Questionnaire-01.pdf (specialistpainphysio.com)
NHS How to get to sleep	Sleep restoration strategies https://www.nhs.uk/live-well/sleep-and-tiredness/10-tips-to-beat-insomnia/
Mind website	Explains sleep and mental health, gives practical suggestions and information about where to get support. https://www.mind.org.uk/information-support/types-of-mental-health-problems/sleep-problems/about-sleep-and-mental-health/
INSIGHT - Nottingham Mental Health Services Mid-Notts' (Mansfield and Ashfield, Newark and Sherwood area)	Offers various support including CBT. This service is free, confidential and covers anyone 18+ years who are registered with a GP in the Nottinghamshire area. https://www.insightiapt.org/locations/nottingham/
Let's Talk – Wellbeing Nottingham City and parts of Nottinghamshire.	Let's Talk - Wellbeing is available to people aged 18 and over who are registered with a GP in Nottingham and parts of Nottinghamshire. https://www.nottinghamshirehealthcare.nhs.uk/ltwb-contact-us

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AUTHORS of Original Guideline

- Dr Greg Hobbs, Consultant in Pain Management, NUH, Roger Knaggs, Specialist Pharmacist – Anaesthesia & Pain Management, NUH Dr Trevor Mills, GP Prescribing Lead, Nottingham City PCT
- Updated 2016 by Roger Knaggs, Advanced Pharmacist Practitioner – Anaesthesia & Pain Management, NUH
- Updated May 2018 by Jill Theobald, Interface Pharmacist in consultation with Roger Knaggs, Specialist Pharmacist in Pain Management, PICS.
- Updated July 2021 by Michalina Ogejo, Pain Management Pharmacist for PICS and Nirlas Bathia, Medicine's Optimisation Pharmacist in consultation with PICS Community Pain Pathway Team (Mrs P Banbury, Dr G Hobbs and Prof R Knaggs).