Global Year Against Neuropathic Pain

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The International Association for the Study of Pain (IASP) has put the battle again neuropathic pain as the theme for the Year 2014/15.

Neuropathic pain is a rather new disease entity. Pain associated with neuropathic was first described in the literature only in the 1920s [1]. The first definition of "neuropathic pain" was accepted by the IASP in 1994 [2]. The definition "pain initiated or caused by a primary lesion, dysfunction or transitory perturbation of the peripheral or central nervous system" was often criticized for its vagueness. In 2011, IASP adopted a new definition of neuropathic pain [3]. The term "dysfunction" was removed and the pain has to be caused by a "lesion" or "disease" that is confined to the "somatosensory" nervous system.

Diagnosis of neuropathic pain

Screening tools

A number of screening tools employing questionnaires using scoring systems based on pain descriptors are available, e.g. the Leeds Assessment of Neuropathic Symptoms and Signs (LANSS), Neuropathic Pain Questionnaire (NPQ), Douleur Pain Questionnaire (DPQ), painDETECT and ID Pain.

However, as with all kinds of screening tests, there are false positives (reduced with increasing sensitivity) and false negatives (reduced with increasing specificity). Moreover, they give no clues to the cause of the pain. Thus, they are at most best at picking up "possible" cases of neuropathic pain and further assessment by clinical examination is needed.

Clinical examination

The objective of clinical examination in assessment of neuropathic pain is to verify or reject the hypothesis that the pain is consistent with a lesion or disease of the somatosensory nervous system.

A comprehensive bedside clinical examination should map out areas of sensory abnormalities, including both positive phenomenon e.g. allodynia or dysesthesia; as well as negative sensory phenomenon e.g. loss of sensation to specific modalities of stimuli including touch, vibration, proprioception, temperature and pin-prick. Positive findings on bedside clinical examination can be further supplemented by laboratory investigations.

Laboratory investigations

The choice of laboratory investigations depends on the availability and the expertise of the centre. These include neuroelectrodiagnostic tools e.g. nerve conduction test, electromyography and somatosensory evoked potential, quantitative sensory testing, microneurography, skin biopsy and functional neuroimaging such as functional MRI and PET scan.

Management of neuropathic pain

Like management of other chronic pain conditions, a multidisciplinary approach is recommended. While the primary objective of treatment is reduction of pain, other outcomes such as mood and emotion, sleep and function should also be considered.

Pharmacological therapy

Pharmacological therapy remains the mainstay of treatment for neuropathic pain. Different classes of pharmacological agents differ by their mechanisms

of action. Identification of the types of lesion in the somatosensory nervous system has certain implication on the choice of pharmacological agents.

Non-pharmacological therapy

Like other chronic pain conditions, pharmacological therapy is often combined with non-pharmacological therapy. Cognitive behavioural therapy, a common psychological intervention, has been found to have positive impact on the short term psychological outcomes following spinal cord injury. Physical therapy and occupational therapy are often recommended for patients with chronic pain.

Interventional therapy

A lot of interventional procedures have been performed by the pain specialists for patients with refractory neuropathic pain. These include epidural block with local anaesthetics and steroids, adhesiolysis, sympathetic blockade, pulsed radiofrequency treatment and spinal cord stimulation.

Conclusion

Management of neuropathic pain remains a challenge to the clinicians. A step-by-step approach aiming at accurate diagnosis followed by a trial of first line pharmacological agents according to various guidelines, together with non-pharmacological therapy, is recommended. Referral to the pain specialist should be considered if the above fails.

References

1. Gordon AH: Clinical Lecture on Lead Neuropath. *Can. Med. Assoc. J.* 14(6), 479-81 (1924).
2. Merskey H, Bogduk N (Eds.): Descriptions of Chronic Pain Syndromes and Definitions of Pain Terms. In: *Classification of Chronic Pain*, 2nd ed., IASP Press, Seattle, USA (1994).
3. Jensen TS, Baron R, Haanpää M *et al.*: A new definition of neuropathic pain. *Pain* 152, 2204–2205 (2011).
4. Wong Clara SM, Hui Grace KM, Chung Edmond KN, Wong Steven HS: Diagnosis and Management of Neuropathic Pain. *Pain Management* 9, 221-31 (2014).

The following table shows common drugs recommended for the treatment of neuropathic pain based on various guidelines [4].

	NeuPSIG	EFNS	NICE
Tricyclic antidepressants	1st line	1st line for PPN. PHN and CP	1st line (except TN)
SSNRI	1st line	2nd line for PPN	1st line (except TN)
Calcium channel α2-δ ligands	1st line	1st line for PPN, PHN and CP	1st line (except TN)
Lidocaine 5% patch	1st line for localized peripheral NP	1st line for PHN	Not mentioned
Tramadol	2nd line (exception: 1st line in acute NP, exacerbation of NP, adjunct during titration with 1st line drugs, and neuropathic cancer pain)	2nd to 3rd line for PPN and PHN	Consider only if acute rescue therapy is needed
Strong opioids	Same as for tramadol	2nd to 3rd line for PPN, PHN and CP	Should not be used in non-specialist settings
Carbamazepine	3rd line (except TN)	1st line for TN	1st line for TN

NeuPSIG = Neuropathic Pain Special Interest Group

EFNS = European Federation of Neurological Societies

NICE = National Institute for Health and Care Excellence

SSNRI = Selective Serotonin-Norepinephrine Reuptake Inhibitors

PPN = painful polyneuropathy

PHN = postherpetic neuropathy

CP = central pain

TN = trigeminal neuralgia

NP = neuropathic pain