

New guidelines in management of neuropathic pain

Essay

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List of Abbreviations

Abb.	Full name
5-HT	5-hydroxytryptamine
5-HTP	5-hydroxytryptophan
ACh	Acetylcholine
AChE	Acetylcholinesterase
AIDP	Acute inflammatory demyelinating polyneuropathy
AMPT	Alph-Methyl -Para-Tyrosine
ATTR	Amyloidosis caused by transthyretin
CIPA	Congenital insensitivity to pain with anhidrosis
CNS	Central nervous system
CO	Carbon monoxide
CRPS	Complex regional pain syndrome
DA	Dopamine
DMPP	Descending modulatory pain pathways
DN4	Diagnosis of neuropathic pain by 4 Questionnaire
DPN	Diabetic peripheral neuropathy
FAP	Familial amyloid neuropathies
FD	Familial dysautonomia
FDA	Food and drug administration
GABA	γ -aminobutyric acid
GBS	Guillain–Barré syndrome
HSAN	Hereditary sensory and autonomic neuropathy
HSN	Hereditary sensory neuropathy

IASP	International association for study of pain
LANSS	Leeds assessment of neuropathic symptoms and signs
L-dopa	Levodopa
MAO	Monoamine oxidase
MS	Multiple sclerosis
NA	Noradrenaline
NCV	Nerve conduction velocity
NDHN	Nociceptive dorsal horn neurones
NE	Norepinephrine
NMDA	N-methyl D Aspartate
NO	Nitric oxide
NP	Neuropathic pain
NRM	Nucleus raphe magnus
NTDs	Neural tube defects
PAG	Periaqueductal grey matter
PHN	Postherpetic neuralgia
PICA	Posterior inferior cerebellar artery
PNS	Peripheral nervous system
PPT	PIN-PRICK THRESHOLD
RSD	Reflex sympathetic dystrophy
SCS	Spinal cord stimulation
SG	Substantia gelatinosa
S-LANSS	Self Leeds Assessment of Neuropathic Symptoms and Signs

SSRI	Selective serotonin reuptake inhibitor
TCAs	Tricyclic antidepressants
TENS	Transcutaneous electrical nerve stimulation
VMM	Ventromedian medulla
WDR cell	Wide Dynamic Range cell

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Introduction

Pain is unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage (*Turk and Dworkin, 2004*).

Pain that lasts a long time is called **chronic**, and pain that resolves quickly is called **acute**.

Pain can be classed according to its **location** in the body, as in headache, low back pain and pelvic pain; or according to the **body system involved**, such as (*Thienhaus et al., 2002*).

- Myofascial pain (emanating from skeletal muscles or the fibrous sheath surrounding them).
- Rheumatic pain (emanating from the joints and surrounding tissue).
- Neuropathic pain (caused by damage or illness affecting the somatosensory system).
- Vascular (pain from blood vessels).

The crudest example of classification by cause simply distinguishes "**somatogenic**" pain (arising from a perturbation of the body) from **psychogenic** pain (arising from a perturbation of the mind (*Turk et al., 2001*).

*Somatogenic pain is divided into "**nociceptive**" and "**neuropathic**"*

Nociceptive pain is caused by stimulation of peripheral nerve fibers that respond only to stimuli approaching or exceeding harmful intensity (nociceptors), and may be

classified according to the mode of noxious stimulation; the most common categories being "thermal" (heat or cold), "mechanical" (crushing, tearing, etc.) and "chemical" (iodine in a cut) (*Keay et al., 2010*).

- **Nociceptive pain** may also be divided into "*visceral*" deep "*somatic*" and "*superficial somatic*" pain.
- Visceral pain originates in the viscera (organs).
- Deep somatic pain is initiated by stimulation of nociceptors in ligaments, tendons, bones, blood vessels, fasciae and muscles, and is dull, aching, poorly-localized pain.
- Superficial pain is initiated by activation of nociceptors in the skin or superficial tissues, and is sharp, well-defined and clearly located(*Spanswick and Main, 2000*).

Neuropathic pain is caused by damage or disease affecting the central or peripheral portions of the nervous system involved in bodily feelings (the somatosensory system). Peripheral neuropathic pain is often described as “burning,” “tingling,” “electrical,” “stabbing,” or “pins and needles” (*Treede et al., 2008*).

The diagnosis of neuropathic pain relies on accurate history and examination. Diagnostic tools such as the DN4 or LANSS scoring tools may be useful. The S-LANSS is designed for self-completion by patients. All of these tools reliably predict the presence of neuropathic pain (*Gilron et al., 2006*).



Treatments should include both *non-pharmacological* and *pharmacological* interventions. Education on the nature of the condition and realistic expectations regarding treatment options must be given at an early stage, for example clients may be advised that current treatment may not be curative but self management may be an achievable and worthwhile goal (*Miaskowski et al., 2005*).

Psychogenic pain, also called psychalgia or somatoform pain, is pain caused, increased, or prolonged by mental, emotional, or behavioral factors. Headache, back pain, and stomach pain are sometimes diagnosed as psychogenic (*Cleveland Clinic and Health information, 2008*).

Phantom pain is pain from a part of the body that has been lost or from which the brain no longer receives signals. It is a type of neuropathic pain. Phantom limb pain is a common experience of amputees (*Kooijman et al., 2000*).



Aim of the Essay

The aim of this essay is to discuss causes, management of neuropathic pain.