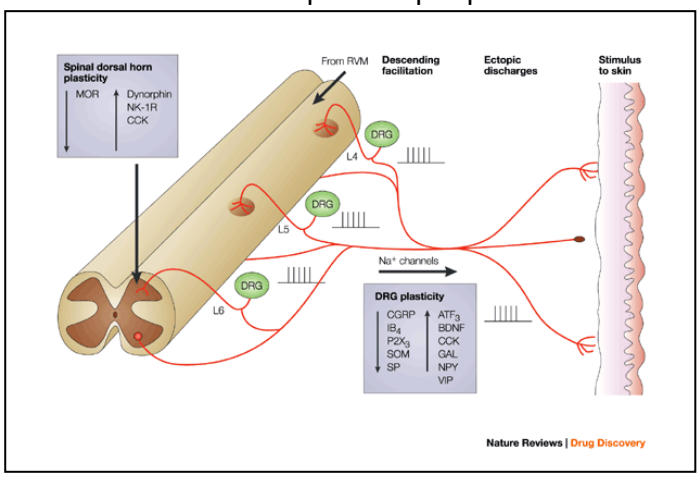
UW Health Pain Care Services uwhealth.org/pain

Pain Care Fast Facts: 5-Minute Clinical Inservice

What is Neuropathic Pain? 4th Ed, 5/11

Neuropathic pain is distinctly different from inflammatory or so-called nociceptive (normal) pain, and is not as well understood. Nociceptive pain results from the stimulation of nociceptors at peripheral nerve endings and normally subsides with time. In contrast, **neuropathic pain is caused by a lesion or disease of the somatosensory nervous system.** This means that a diagnosis is achieved only once a neurological evaluation is completed. The mechanisms underlying neuropathic pain are complex, multifactorial and evolve over time. Although mechanisms of neuropathic pain are still not entirely understood, current hypotheses include possible genetic predisposition causing susceptibility after nerve injury, interruption of the normal balance of sensory nerve input into the dorsal horn, abnormal growth and synaptic activity of the sympathetic nervous system, and abnormal neuroinflammatory response to injury. There are numerous causes of nervous system injury, including exposure to toxins, bacterial or viral infections, metabolic disease, ischemia, surgical trauma, or stroke. Current research studies indicate that neuropathic pain results from cellular changes that occur in both the peripheral and central nervous system, resulting in abnormal processing of sensory input.



Source http://www.nature.com/nrd/journal/v2/n6/images/nrd1107-f1.gif

Neuropathic pain is diagnosed on the basis of sensory abnormalities which range from loss of sensation to pain and/or increased sensitivity. Pain can be spontaneous, paradoxical or provoked. Neuropathic pain may or may not be accompanied by numbness, dysesthesia/paresthesia (tingling, pins and needles, crawling feeling), or motor loss. There is no single sign or symptom that is diagnostic. Patients may describe neuropathic pain as tingling, sharp, shooting or burning. Neuropathic pain is often associated with abnormal painful sensations in the area of pain including allodynia (pain produced from a stimulus that does not normally provoke pain) and hyperalgesia (an increased response to a painful stimulus).

Treatment

Although many medications have been shown to be useful in the treatment of neuropathic pain (see table below), there is no absolute consensus on the most appropriate treatment choice or first-line, second-line order of analgesic treatment. However, response to nonsteroidal anti-inflammatory drugs (NSAIDs) and acetaminophen is poor. Of the drugs listed below, no one drug appears to be more effective than another. ***The choice of analgesic must be based on comprehensive patient assessment with consideration of multiple factors including individual risk factors for adverse events, co-morbidities, cost and insurance coverage, patient response and an acceptance that combinations of medications may be necessary**.

Drugs Used to Treat Neuropathic Pain listed Alphabetically* by Drug Class					
	Opioids	Anticonvulsants	Antidepressants	Local Anesthetics/Antiarrhythmics	Other
First line		• Gabapentin • Pregabalin	• Duloxetine • Tricyclic antidepressants (nortriptyline and desipramine preferred) • Venlafaxine	• Lidocaine • 5% lidocaine patch (topical)	
Second line	All including tramadol	• Carbamazepine • Lamotrigine • Topiramate • Valproic acid • Zonisamide	• Bupropion • Citalopram • Paroxetine	• Mexiletine	• Baclofen • Botulinum toxin • Capsaicin (topical) • Clonidine

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