

Pharmacological management of chronic neuropathic pain.

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Introduction

Neuropathic pain (NeP), defined by the International Association for the Study of Pain as pain “initiated or caused by a primary lesion or dysfunction in the nervous system”, is a challenging clinical problem because the pain is often severe and disabling. It can be caused by lesions of the peripheral or central nervous system, or both. Pain can be a manifestation of nerve injury, but there are few predictors to indicate which patients will develop this complication.

Chronic neuropathic pain, characterized by persistent, debilitating pain resulting from damage or dysfunction of the nervous system, presents a significant clinical challenge. It often arises from conditions such as diabetic neuropathy, postherpetic neuralgia, and nerve injury. Pharmacological interventions play a vital role in the management of chronic neuropathic pain, aiming to alleviate symptoms, improve patients' quality of life, and restore functional abilities. In this article, we will explore the advancements and challenges in pharmacological approaches for chronic neuropathic pain [1].

Understanding the pathophysiology

To effectively manage chronic neuropathic pain, it is crucial to comprehend the underlying pathophysiological mechanisms. Neuropathic pain is often associated with aberrant neuronal signaling, peripheral and central sensitization, and altered neurotransmitter function. By targeting these mechanisms, pharmacological interventions can modulate pain transmission and provide relief.

Clinical features and differential diagnoses of neuropathic pain

The clinical features of neuropathic pain can be divided into spontaneous pain and stimulus-evoked pain. Spontaneous pain is commonly described as burning or intense tightness with superimposed shooting or lancinating pain. Stimulus-evoked pain includes allodynia, which is pain in response to a normally nonpainful stimulus, and hyperalgesia, defined as increased pain in response to a normally painful stimulus. Superimposed autonomic features, such as alterations in temperature, colour and sweating, as well as the development of trophic changes, suggests a diagnosis of reflex sympathetic dystrophy or complex regional pain syndrome [2].

The differential diagnosis of neuropathic pain is extensive, and includes central and peripheral causes. Examples of central neuropathic pain include poststroke pain (‘thalamic pain syndrome’), pain related to multiple sclerosis and pain

due to spinal cord injury. Common causes of peripheral neuropathic pain include painful diabetic neuropathy, postherpetic neuralgia and radicular pain due to nerve root fibrosis following failed back surgery. In fact, chronic back pain on a nociceptive basis frequently coexists with radicular pain in the setting of failed back syndrome [3].

The diagnosis of neuropathic pain is based primarily on the patient’s history and physical examination. Postherpetic neuralgia and painful diabetic neuropathy are usually easy to diagnose when there is a history of shingles and diabetes mellitus, respectively. However, pain radiating into an extremity can be either referred myofascial or neuropathic pain, and these can be much more challenging. Simple questionnaires based on sensory descriptors and sensory examination have been developed to differentiate between somatic and neuropathic pain. Such instruments have been shown to be valid and reliable discriminators of neuropathic pain. In addition, the presence of true weakness (sometimes difficult to differentiate from pain-related or antalgic weakness), reduced or absent reflexes, allodynia and hyperalgesia all favour a diagnosis of neuropathic pain. Electromyography and nerve conduction studies are sometimes useful to provide more objective evidence of nerve injury, although electromyography study results are often normal in small fibre neuropathies [4].

General considerations in the management of neuropathic pain

Neuropathic pain can be severe and unrelenting, it is important to recognize and treat comorbidities, such as anxiety and depression. It is also important to recognize secondary treatment goals, such as improving sleep, ability to function and overall quality of life. However, treatment goals must be realistic. To accomplish this, it is important for caregivers to validate the patient’s pain to gain trust. This is usually straightforward from the caregiver’s point of view, because most neuropathic pain states are based on well-defined injuries to the nervous system. It is also important to convey that the primary goal in most cases is to make the pain ‘bearable’ or ‘tolerable’ – not to eliminate the pain. This can make a huge difference in patient satisfaction when pharmacological treatments are instituted [5].

References

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