Neuropathic pain – a debilitating disease

Neuropathic pain is now seen as a disease rather than a symptom and should be treated as such, writes Paul Murphy

THE INTERNATIONAL ASSOCIATION FOR THE STUDY of Pain (IASP) defines pain as “an unpleasant sensory and emotional experience associated with actual or potential issue damage, or expressed in terms of such damage” (www.iasp-pain.org). Chronic pain is defined as pain persisting in duration for greater than three months. A major pan-European study conducted in 2003 identified the prevalence of chronic pain in Ireland to be 13% of the adult population. It is estimated that there are approximately 585,000 chronic pain sufferers in Ireland, with 36% of all households affected. These figures are replicated throughout the world, with prevalence rates of approximately 17.5% of males and 20% of females in Australia. The prevalence of chronic pain rises with advancing age, reaching a peak of 31% in the 80-84 year old group. Chronic pain is reported as moderate in 65% of sufferers and severe/intolerable in 35%. In 46% of sufferers, pain is reported as being unremitting.

Types of pain

The two major types of pain seen in the clinical situation are nociceptive and neuropathic pains. In practice, people often present with pain that has a mixture of both nociceptive and neuropathic components (mixed pain). The reason for dividing pain into these subtypes is that there are differences in terms of underlying mechanisms.

These differences in pathophysiology mean that our approach to the treatment of neuropathic pain is also different. The IASP defines neuropathic pain as “pain initiated or caused by a primary lesion or dysfunction in the nervous system”. This is a widely accepted definition and includes conditions such as post-herpetic neuralgia (post-shingles pain), trigeminal neuralgia, post-stroke pain, pain following spinal cord injury, pain associated with diabetes and leg pain post back injury or surgery. The estimated prevalence of neuropathic pain is 1.5% of the US population and up to 10% of all chronic pain is neuropathic in nature.

Neuropathic pain

There are a number of key features or descriptors that suggest that pain is neuropathic in nature. The pain character is often described as burning, stabbing or shooting in nature. The pain may be spontaneous in onset or may be provoked by touch, physical activity or environmental factors such as changes in temperature. In certain conditions, such as diabetes-associated neuropathic pain, the symptoms are predominantly nocturnal with sufferers complaining of burning pain in their feet at night.

Additionally, neuropathic pain sufferers often complain of other symptoms suggestive of abnormal nervous system sensitivity. These may include hyperalgesia, where mildly painful stimuli are perceived as being greatly enhanced, and allodynia, in which non-painful stimuli such as strok-
Therapeutic developments

Increased understanding of the pathogenesis of neuropathic pain has been associated with significant therapeutic developments. Many treatment options are now available for the chronic neuropathic pain sufferer – medications such as anticonvulsant agents\(^2\) (gabapentin/pregabalin) and tricyclic antidepressants/SSRIs\(^2\) play a pivotal role.

Novel agents such as the NMDA receptor antagonist ketamine\(^3\) and the CB1 cannabinoid receptor agonist nabilone\(^4\) may be effective in more resistant cases of neuropathic pain. Opioids, however, have generally been demonstrated to be poorly effective in the management of neuropathic pain; however there is some evidence to support the use of methadone.\(^4\)

In many instances interventional therapies may be required in addition to medication. Such therapies may include minor interventions such as nerve blocks, epidurals and thermal neural lesion (rhizotomy). In some cases advanced neuromodulation therapies such as spinal cord stimulation,\(^6\) peripheral field stimulation or spinal drug delivery may be required to provide relief. In addition to all of these potential therapies, chronic pain sufferers often benefit from physical and psychological rehabilitation as part of a pain management programme.\(^7\)

A disease, not a symptom

Irrespective of the underlying condition associated with neuropathic pain, at its core resides a functional abnormality within the central and/or peripheral nervous system. Chronic/neuropathic pain is now considered to be a disease entity in its own right.\(^8\)

In this concept, regardless of the underlying disease, injury or other event that triggers persisting pain, the pain itself is associated with physical, psychological and environmental changes that represent a distinct disease process. This important concept draws attention to the fact that persistent (chronic) pain needs to be treated within the same framework as other chronic diseases, rather than regarding it as ‘only a symptom’.

In 2011, the IASP formally approved the Declaration of Montreal.\(^9\) Following input from a wide range of medical practitioners and patients from 126 countries, it was declared that access to pain management be considered a fundamental human right.

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References

Posternt pain – Post-herpetic neuralgia

The most common neurological disease observed in the community is shingles (acute herpes zoster). This condition affects approximately 20% of the population and 50% of those aged over 50 years. Shingles results from a reactivation of the chickenpox virus (herpes zoster) and is characterised by a band-like rash most commonly occurring over the chest region. Occasionally the face or eye may be affected. The rash is composed of numerous small itchy blisters called vesicles and is accompanied or even preceded by burning and stabbing pains. This rash can be so severe that it has been termed ‘a ring of roses from hell’.

The most feared consequence of shingles is the potential development of post-herpetic neuralgia (PHN). In this condition, the shingles rash disappears but the neuropathic pain persists and may remain in the affected area for life. An individual’s age at the time they develop shingles appears to be the key determinant as to whether one will develop PHN, with those under 50 years having a 5% risk as opposed to those over 60 years, who have an approximate 30-50% risk.

Diabetes-associated neuropathic pain

With the increasing prevalence of diabetes type 2 in the Irish population, diabetes-associated neuropathic pain is being seen with increasing frequency. It is reported that approximately 50% of type 2 diabetes patients may develop chronic pain associated with nerve damage. As diabetes may be present for many years prior to diagnosis, up to 8% of those with diabetes may only be diagnosed as part of their investigations for neuropathic pain.

Many other conditions including spinal cord injury, stroke, post-surgical syndromes and trigeminal neuralgia may be associated with neuropathic pain. Chronic low back pain with associated neuropathic pain in the legs (radicular pain) may occur as a result of degenerative disease in the spine or following trauma and is a major cause of distress to the individual.

Additionally chronic back/radicular pain has a significant impact on society as a whole. A study of the socio-economic costs of pain syndromes in the UK estimated the direct health care cost of back pain in 1998 to be £1.6 billion. However, this direct cost is seen to be insignificant compared to the cost of informal care and the production losses related to it, which total £10.7 billion.

Overall, chronic pain is one of the most costly of all medical conditions to the individual and society. The impact of chronic pain should not, however, be viewed simply in economic terms. Chronic pain has a major detrimental effect on the quality of life of the millions of chronic pain sufferers, and their families, in Europe.

Without adequate treatment, chronic/neuropathic pain sufferers are often unable to work or even to perform the simplest of tasks. As a consequence, chronic pain patients often endure psychosocial, as well as physical hardship including poor nutrition and weight loss, decreased activity, sleep disturbances, social isolation, mental problems, unemployment and financial problems, anxiety, fear and depression.

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References