PAIN IN LEPROSY PATIENTS: SHALL WE ALWAYS CONSIDER AS A NEURAL DAMAGE?

Neuropathy is the hallmark of leprosy, with Mycobacterium leprae affecting primarily skin and peripheral nerves, which results in an immunological response and leads to motor, sensory and autonomic alterations. Neuropathic pain is a common complaint due to leprosy neuritis, whether spontaneous or on palpation of a nerve trunk. It can be present during or after treatment with multidrug therapy, however the chronic neuropathic pain in treated leprosy is arising as a major problem.1–6

Different pathogenetic mechanisms behind neuropathic pain in leprosy can be suggested as the entrapment of the nerve, firing of the nervi nervorum. In later stages, axonal damage and regeneration, functional changes such as spontaneous discharges, lowered activation thresholds, and exaggerated responses of the nociceptors might be involved.7,8

In practice, there are different therapies described in literature to treat chronic neuropathic pain and improve nerve function. Corticosteroids, specially prednisone, work by controlling the acute inflammation and relieving the pain, but with adverse effects in long-term therapy, surgical decompression (neurolysis), tricyclic antidepressants and anticonvulsant drugs.9–11

In spite of multidrug therapy (MDT), some patients develop chronic neuropathic pain after completion of this treatment. The reason why is unknown and a lack of knowledge. Some authors in a few studies reported that little attention is given to these cases and it could be a major problem for leprosy patients who have been discharged from treatment.7–15 Hietaharju et al.7 described the clinical findings of 16 multibacillary patients who had chronic pain despite finishing their treatment. Lund et al.14 studied histological and clinical findings in 17 leprosy patients with chronic neuropathic pain who had completed MDT. More recently Saunderson, Bizuneh and Leekassa15 in a study of 96 patients who have been discharged for more than 10 years, found 28 with symptoms of neuropathic pain and it was reported as severe in 12. Besides motor impairment and deformities, pain can be disabling and is the new challenge in the post-treatment care and part of social reintegration.

The approach and the management of chronic neuropathic pain can be a challenge. Some patients describe pain with different characteristics as ‘shooting’, ‘electric’ or ‘stabbing’ and the examiner must differentiate neuropathic pain from other musculoskeletal disorders.16

Nerve lesion leads to changes in muscle function, resulting in muscle imbalances with deformity of soft tissues and joints2–6 that can contribute to the development of myofascial syndrome. This condition has some characteristics that can be similar to neuropathic pain such a regional burning pain complaint, paraesthesia in the typical trigger point distribution, exquisite tenderness in taut band, a local twitch response and a restricted range of motion.17–22 In assessing pain during the examination, the McGill and DN4 questionnaire are good tools to differentiate neuropathic from myofascial pain in the examination.23

Besides the differential diagnosis with other musculoskeletal problems, pain must be considered as a complex symptom and much more complex than ‘physiological’ aspects. According to the International Association for the Study of Pain – IASP, pain must be defined as ‘an unpleasant sensory and emotional experience associated with actual or potential tissue damage or, described in terms of such damage.’24,25
A common practice is to consider pain in a simple neurophysiologic model, emanating from activation of specific pain receptors in the periphery, which initiate pain impulses that travel through a spinal pathway to the brain and the brain’s contribution is to interpret the stimulus from the ascending fibres. In most cases, brain connections are not considered and contributions of psychological or affective components to pain are not recognised.\(^{26,27}\)

Nowadays a complex system (neuromatrix) is used trying to explain the connections in the brain. The neuromatrix pain theory offers a more comprehensive framework for understanding the subjectivity of pain. It guides us away from the Cartesian concept toward the concept of pain as a multidimensional experience produced by multiple influences. These influences range from the existing synaptic architecture of the neuromatrix, determined by genetic and sensory factors, to influences from within the body and from other areas in the brain, proposing that can be a neurosignature for pain experience. The neurosignature pattern is also modulated by sensory inputs and by cognitive events, such as psychological stress.\(^{26–28}\)

Psychological and psychosocial aspects play important roles in the setting and perpetuation of symptoms. Mood and anxiety disorders, secondary gains such as early retirement and financial compensations must all be acknowledged as possible contributors to the symptoms. Chronic pain is dependent on individual resources of stress prevention strategies, coping skills, environmental influences on symptoms and dysfunctional cognitions and beliefs about illness.\(^{29–32}\)

Lasry-Levy et al.\(^{33}\) evaluated the association of chronic neuropathic pain with psychological morbidity in 101 leprosy patients in India. In this study, clinical neurological examination, assessment of leprosy affected skin and nerves, the Douleur Neuropathique 4 and the 12-item General Health Questionnaire were made to identify neuropathic pain and psychological morbidity. The authors found numbness, tingling, hypoesthesia to touch and pinprick as main sensory symptoms of neural damage and pain. The results showed that 21.8% of the leprosy patients in the study had neuropathic pain and psychological morbidity was detected in 41% of patients with neuropathic pain.

In leprosy patients stigmatisation, depression, anxiety, social exclusion contribute to the increase or sustained chronic pain condition. This condition not only affects the patients, but also the members of their immediate social environment.\(^{32,34}\)

Chronic neuropathic pain is still a problem in leprosy patients and all approaches with drugs or surgery are important. However chronic pain, and consequently disability, must be faced not only as a somatic pathology, but also influenced by psychological and social factors. Considering the complexity of chronic pain, multidisciplinary interventions have become more accepted to really identify and treat these several factors.\(^{7,8,13–16}\)

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