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Neuropathic Pain Management Approaches in Primary Care

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Introduction

Sustained painful stimuli result in spinal sensitization, which is defined as heightened sensitivity of spinal neurons, reduced activation thresholds and enhanced responsiveness to synaptic inputs. This can manifest in expansion of the affected area, increased response to painful inputs and transmission of pain following non-painful stimuli. Central sensitization is largely mediated by the N-methyl-D-aspartate receptor. Although experimental N-methyl-D-aspartate-receptor blockade clearly suppresses central sensitization, analgesic efficacy of N-methyl-D-aspartate antagonists has been disappointing, likely because of the narrow therapeutic window of available agents [1]. Although many patients with neuropathic pain pursue complementary and alternative treatments, rigorous evidence supporting efficacy of nondrug therapy is limited. Some reports suggest benefits of conservative interventions such as exercise, transcutaneous electrical nerve stimulation, percutaneous electrical nerve stimulation, graded motor imagery and cognitive behavioural therapy or supportive psychotherapy. Tricyclic antidepressants have repeatedly been shown to reduce neuropathic pain [2]. Analgesic actions may be attributable to noradrenaline and serotonin reuptake blockade, N-methyl-D- aspartate-receptor antagonism and sodium-channel blockade. The NNT is about 3 both for balanced noradrenaline and serotonin reuptake inhibitors and predominantly noradrenaline reuptake inhibitors. Tramadol is a weak opioid and a mixed serotonin noradrenaline reuptake inhibitor. Three RCTs of tramadol for neuropathic pain have yielded an overall NNT of Methadone is a synthetic opioid potentially useful for controlling neuropathic pain because of its N-methyl-D- aspartate -antagonist properties [3]. However, its long half-life necessitates extremely careful dose titration. Two small RCTs of methadone demonstrated benefit in managing neuropathic pain, and open-label experience suggests promise in a wide variety of neuropathic pain conditions. Given the limited effectiveness of current treatments, combining different drugs may result in improved results at lower doses and with fewer side effects. Many patients with neuropathic pain currently receive drug combinations, albeit in the absence of supportive evidence [4]. In a recent RCT, analgesia with a morphine–gabapentin combination was superior to treatment with either drug alone. In a study involving 11 patients who did not respond to gabapentin, a gabapentin venlafaxine combination was superior to gabapentin alone. In another RCT, the addition of the neuroleptic fluphenazine to amitriptyline therapy provided no benefit [5]. Future trials are needed to evaluate optimal drug combinations and dose ratios as well as safety, compliance and cost-effectiveness. Trigeminal neuralgia and glossopharyngeal neuralgia are unique conditions. They are characterized by orofacial, paroxysmal, shock-like pains triggered by light, localized, tactile stimulation with minimal constant pain between paroxysms [6]. These syndromes are also distinguished by their high responsiveness to carbamazepine. Baclofen is a muscle relaxant shown to be useful in trigeminal neuralgia in the setting of resistance to carbamazepine [7]. High success rates have also been reported following invasive treatments such as micro-vascular decompression, trigeminal ganglion balloon compression and stereotactic radiosurgery [8]. Although rigorous supportive evidence is limited, more invasive treatments may be considered for patients with intractable neuropathic pain. Procedures include epidural or perineural injections of local anaesthetics or corticosteroids, implantation of epidural and intrathecal drug delivery systems, neural ablative procedures and insertion of spinal cord stimulators, just to name a few [9]. Consideration of highly invasive procedures such as insertion of intrathecal infusion pumps or spinal cord stimulators is generally reserved for patients with no surgically treatable pathology who have failed more conservative treatments and undergone psychological evaluation. Although this level of caution may also be applied to nerve block procedures, some conditions could warrant nerve blocks earlier in the clinical course. For example, sympathetic nerve blocks in early complex regional pain syndrome may be a crucial adjunct for the facilitation of physiotherapy and rehabilitation.

Acknowledgement

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Conflict of Interest

None

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