Spinal Cord Injury Associated Neuropathic Pain: The Role of Gabapentinoids
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Objective

To evaluate the efficacy of gabapentinoids in the management of neuropathic pain in patients with spinal cord injury.

Introduction

Chronic pain after spinal cord injury occurs in two-thirds of the patient population. The pain often has neuropathic and nociceptive components. However, consistent with the nature of injury nearly half suffer neuropathic pain. It begins within the first few months of injury, and is usually progressive for about 3-5 years, before reaching a plateau. The pain is usually severe in nature (VAS ≥7), and complicates treatments, impacts sleep, mood, and overall quality of life. Furthermore, these patients have a great need for rehabilitation, and uncontrolled pain interferes with rehabilitation efforts. Treatment of neuropathic pain is not straightforward; NSAIDs and similar analgesics are often ineffective. Gabapentinoids and similar analgesics are often ineffective. Gabapentinoids (i.e. pregabalin and gabapentin) are anticonvulsant medications used for analgesia. They mimic the structure of gamma-aminobutyric acid, and work by blocking α2δ subunit of Ca++ channel of neurons inhibiting neuronal hyperactivity and signal transmission by decreasing glutamate, norepinephrine, substance P, CGRP release. These agents are effective in treating a variety of neuropathic pain conditions, such as diabetic neuropathy, and post herpetic neuralgia. Therefore, it is reasonable to use them in neuropathic pain associated with spinal cord injury.

Methods

To evaluate the role of these medications for SCI neuropathic pain, a comprehensive and critical review of the literature was performed. Literature review was conducted on MEDLINE/ PubMed in April 2014. All relevant clinical trials were screened. Further analysis using American Academy of Neurology Clinical Practice Process Manual was performed for studies that measured neuropathic pain after administration of gabapentin or pregabalin vs. placebo/alternative treatment, subjects ≥18 years old, ≥50% of sample suffered SCI. Three RCTs examining gabapentin between 2002-2007 and three RCTs examining pregabalin between 2006-2013 were analyzed.

AAN Level A recommendation: Clinicians caring for patients with neuropathic pain associated with SCI should offer their patients gabapentinoids for treatment. This is based on high magnitude of evidence for benefit and low risk, and consistent with Oxford Centre for Evidence-Based Medicine guidelines.

Discussion

Analyses demonstrated a decrease in pain with the administration of gabapentinoids. Mean change in VAS scores ranged from -0.75 to -5.3 for gabapentin (600-3600mg/day) and -1.88 to -2.5 for pregabalin (150-600mg/day). Pregabalin demonstrated significant improvement in anxiety and depression in two RCTs. Improvement in sleep was found in two trials of pregabalin and two trials of gabapentin.

Gabapentin and pregabalin are effective agents in the treatment of neuropathic pain associated with spinal cord injury. They also seem to, at least to some extent, ameliorate comorbid psychiatric symptoms, like anxiety and depression. This is a substantial finding, as patients with chronic pain have higher rates of both anxiety and depression compared to the general population. Further, patients often showed improvement in sleep with decreased sleep interference. Interestingly, there are no studies in the spinal cord population examining the difference in efficacy of pregabalin vs. gabapentin, so it is difficult to make a direct comparison of the two. The side effect profiles of both include dizziness, peripheral edema, and somnolence. The latter effect could at least partially explain the improvement in sleep seen with both medications, in addition to their analgesic properties.

References


