
ORIGINAL RESEARCH—ERECTILE DYSFUNCTION

Association Between Neuropathic Pain, Pregabalin Treatment, and Erectile Dysfunction

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ABSTRACT

Introduction. The pathophysiology of erectile dysfunction (ED) may be vasculogenic, hormonal, anatomical, neurogenic, drug-induced and/or psychogenic in origin. Neuropathic pain (NP) may facilitate ED, because it is frequently associated with anxiety, depression, and its drug, pregabalin, may also contribute ED.

Aim. The objective of this study was to determine whether pregabalin treatment for patients with neuropathic pain promotes erectile dysfunction.

Methods. The study sample consisted of a total of 102 male subjects that were subdivided into three groups. Group 1 patients (n = 31) had a pre-existing diagnosis of NP and was treated with 300 mg/day of pregabalin for at least 3 months. Group 2 patients (n = 34) were diagnosed with NP for at least 3 months; however, neither were they treated with pregabalin nor did they received physical therapy throughout the study. Lastly, healthy age-matched control subjects comprised group 3 (n = 37).

Main Outcome Measures. Patients in all groups completed the International Index for Erectile Function (IIEF) questionnaire.

Results. Mean age and mean body mass index did not differ significantly between each of the three groups. The cause of NP and the mean duration of having a diagnosis of NP did not differ significantly in groups 1 and 2. However, IIEF scores were significantly lower for group 1 when compared to group 2 in terms of erectile function, orgasmic function, overall satisfaction and total score. Yet groups 1 and 2 did not diverge significantly in the intercourse satisfaction and sexual desire scores. Overall IIEF scores for group 3 were significantly higher than those of group 2 except for mean erectile function scores.

Conclusion. Taking pregabalin for the treatment of neuropathic pain poses an increased risk for developing ED in male patients. Thus, clinicians prescribing pregabalin to patients diagnosed with neuropathic pain should assess for ED before and during treatment with this medication. **Bozkurt M, Gocmez C, Soylemez H, Daggulli M, Em S, Yildiz M, Atar M, Bozkurt Y, and Ozbey I. Association between neuropathic pain, pregabalin treatment, and erectile dysfunction. J Sex Med 2014;11:1816–1822.**

Key Words. Neuropathic Pain; Pregabalin; Erectile Dysfunction

Introduction

Chronic pain is a significant health problem that affects one in five adults [1]. In general, pain can be classified according to etiology as

either neuropathic or inflammatory. The pathophysiology of inflammatory pain is based on sustained nociceptor stimulation and may be observed in autoimmune diseases such as rheumatoid arthritis. In contrast, neuropathic pain (NP)

arises from a lesion affecting peripheral or central somatosensory pathways. NP is relatively more difficult to diagnose and treat and is primarily caused by lumbar or cervical radiculopathies, spinal cord injuries, and diabetes [2,3]. Moreover, NP is typically chronic and is frequently associated with anxiety, depression, and sleep disorders [4]. Due to the pathophysiology and symptoms often associated with NP, first line treatment strategies treat both NP and its comorbidities such as anticonvulsants and tricyclic antidepressants [5,6]. Additional treatments for NP are calcium channel ligands including pregabalin, gabapentin, and topical lidocaine [7].

Pregabalin is an anticonvulsant that has been shown to be effective in an array of randomized controlled clinical trials studying painful neuropathic conditions with central and peripheral etiologies [8]. Pregabalin is also indicated in treating psychiatric conditions such as generalized anxiety disorder, social anxiety disorder, obsessive compulsive disorder, posttraumatic stress disorder, schizophrenia, bipolar mania, and major depression [9–11]. Recent studies demonstrate that pregabalin may aid in treating alcohol withdrawal [12]. Due to the broad applications of pregabalin, including but not limited to improving anxiety and pain due to disordered sleep, it is becoming prescribed more widely [13].

Erectile dysfunction (ED) is a common disorder affecting men, and it is estimated that more than half of males between the ages of 40 to 70 years suffer from it [14]. This condition is described as either a persistent or recurrent inability to have a sufficient erection for satisfactory sexual performance [15]. The pathophysiology of ED is complex and may be vasculogenic, hormonal, anatomical, neurogenic, drug-induced and/or psychogenic in origin [16]. Common medications that have ED as a side effect include antihypertensive drugs, especially diuretics; antidepressants; antiepileptics; antipsychotics; anti-androgens; and recreational substances such as alcohol, cocaine, and heroin [16,17].

The association between sexual dysfunction and older generation antiepileptic drugs such as carbamazepine, phenobarbital, phenytoin, and primidone has long been known [18]. Whereas sexual dysfunction due to pregabalin, which may be prescribed for the treatment of partial epilepsy and neuropathic pain, has been rarely described [19]. By itself neuropathic pain may contribute to sexual dysfunction, as NP is frequently associated with anxiety and depression. Because NP facilitates ED

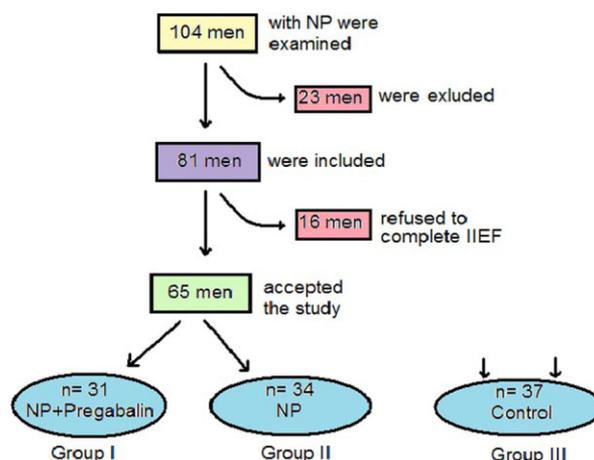


Figure 1 Schema of the study design. IIEF = International Index of Erectile Function.

and pregabalin has the potential to contribute to ED as well, we aimed to investigate the effects of both NP and pregabalin use on ED in male patients.

Methods

Study Sample

Initially, 104 NP patients receiving care at the Physical Medicine and Rehabilitation Department of the Faculty of Medicine were selected for the participation in the study. However, 23 patients met the exclusion criteria and 16 patients refused to provide consent for participation. A total of 65 patients with NP completed the IIEF questionnaire with or without pregabalin use. In all there was a total of three groups: group 1 included patients with NP that were administered pregabalin for at least 3 months (NP + Pregabalin); group 2 was comprised of patients diagnosed with NP and were not prescribed analgesic medications including pregabalin or received any physical therapy for at least 3 months (NP); and group 3 was the control group with age, weight and height matched males without NP (control). Control subjects were composed of voluntary healthy hospital staff. The scheme of three groups is shown on Figure 1.

Diagnosis of NP

NP was diagnosed based on history and physical exam, magnetic resonance imaging (MRI) and/or electromyography testing (EMG) when indicated. The inclusion criterias for NP were: men or women with pain of at least moderate severity, a duration of at least 3 months and which could be

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