THE JOURNAL OF
SEXUAL MEDICINE

Self-Reported Neuropathic Pain Characteristics of Women With Provoked Vulvar Pain: A Preliminary Investigation

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ABSTRACT

Background: Provoked vestibulodynia (PVD) is a common chronic genital pain condition affecting approximately 12% of premenopausal women. Although parallels have been drawn between PVD and neuropathic pain (NP), no studies have examined self-reported NP characteristics in PVD.

Aim: To explore pain symptoms that resemble NP reported by those with PVD and compare responses with those with an established NP condition.

Methods: Women with provoked vulvar pain (PVP; n = 65) completed online questionnaires designed to assess characteristics of NP. Responses were compared with those of women with postherpetic neuralgia (PHN; n = 30).

Outcomes: In addition to a range of descriptive questions, participants completed the McGill Pain Questionnaire, the Self-Complete Leeds Assessment of Neuropathic Signs and Symptoms (S-LANSS), the Neuropathic Pain Symptom Inventory (NPSI), and the Pain Quality Assessment Scale (PQAS).

Results: PVP exhibits some neuropathic characteristics, typically evoked pain (as opposed to the more constant pain of PHN) indicative of allodynia and hyperalgesia. Specifically, women with PVP scored, on average, higher than the NP cutoff on the S-LANSS, and there were no significant differences between women with PVP and those with PHN on some NPSI subscales. However, women with PHN reported more NP symptoms on the PQAS, S-LANSS, and other NPSI subscales.

Clinical Implications: Validated NP questionnaires could be of particular use for health care professionals who need a more efficient way to assess symptoms of patients with PVP and should be included in future studies investigating the mechanisms and treatment of this pain.

Strengths and Limitations: This study takes a unique approach to the examination of PVP by using multiple validated NP measures to compare pain characteristics with those of a group of participants with PHN, an established NP condition. However, it is limited by self-reported data not confirmed with clinical examination, small size of the PHN group, and the severity of the pain experienced in the PVP group.

Conclusion: Women with PVP report some symptoms suggestive of NP characteristics, and future research should use NP measures in addition to physical examinations to further investigate the mechanisms that maintain this pain condition. **Dargie E, Gilron I, Pukall CF. Self-Reported Neuropathic Pain Characteristics of Women With Provoked Vulvar Pain: A Preliminary Investigation. J Sex Med 2017;XX:XXX–XXX.**

Key Words: Vulvodynia; Postherpetic Neuralgia; Pain Measurement; Neuropathic Pain

INTRODUCTION

Provoked vestibulodynia (PVD) is a common subtype of idiopathic chronic vulvar pain (vulvodynia) affecting 7% to 12% of premenopausal women.[1,2] PVD consists of severe pain on contact to the vaginal opening,[3,4] sometimes accompanied by redness along the posterior fourchette.[5] Although PVD was once believed to be psychogenic,[3] research suggests that it is better classified as a somatic chronic pain condition[6] sharing some characteristics with neuropathic pain (NP).[6–8]

NP is defined as "pain arising as a direct consequence of a lesion or disease affecting the somatosensory system."[9] Diagnosing an NP condition begins by identifying pain patterns that align with common NP descriptors, which can be accomplished through the use of screening tools.[9–11] A working hypothesis about NP characteristics of pain is explored during physical examinations to determine whether there is a lesion to, or disease

Received August 19, 2016. Accepted February 19, 2017.

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http://dx.doi.org/10.1016/j.jsxm.2017.02.008

of, the somatosensory system.[9] For example, women with PVD commonly describe their pain as "burning,"[5,12] which is often experienced by people with NP[13,14] and is sometimes used as a marker of NP.[15] Furthermore, women with PVD exhibit changes in vulvar pain processing consistent with allodynia and hyperalgesia,[6,16] suggesting sensitization—an underlying manifestation of NP resulting from a lesion to nerves in the sensory nervous system.[17]

Although lesions are not readily apparent at medical examination of many women with PVD,[18] some pathologic processes have been associated with hypersensitivity. Biopsy studies have demonstrated increased innervation of the vulvar vestibule[19–21] and other markers, such as an increase in subepithelial heparinase activity,[22] which has been linked to the development of painful diabetic neuropathy.[23] Although many NP conditions involve sensory loss (eg, decreased sensitivity in some areas) in addition to sensory gain[24] (eg, increased sensitivity in other areas), the increased innervation in PVD provides an example of nerve changes leading to sensory gains provoked by external contact. Women with PVD experience body-wide changes in sensitivity[6,25] and augmented sensory processing,[26] suggesting that sensory dysregulation might be involved the expression of this pain condition.[27] This pattern has been evidenced in other chronic pain[28,29] and some NP[30] conditions[31] (eg, irritable bowel syndrome, chronic pain after whiplash, postsurgical neuropathy, lumbar radiculopathy).

However, no studies have used validated NP questionnaires to characterize self-reported NP symptoms in PVD or compare PVD with an established NP condition. Thus, the authors administered NP questionnaires[10] online and compared women with provoked vulvar pain (PVP; those whose self-reported symptoms were similar to those of women with PVD) with women with postherpetic neuralgia (PHN; longer than expected pain associated with the presence of the herpes zoster rash, or shingles) who experience different NP symptoms such as burning, allodynia, and hyperalgesia.[32] The following research question was of primary interest: Do women with PVP display a different pain symptom pattern than those with PHN?

METHODS

Participants

In the interest of gathering responses from as many participants as possible without geographic restriction, this study was conducted online. Because participants could be from anywhere in the world, it was not feasible to invite them to take part in an in-person diagnostic physical examination for the present study. Past PVD research has established a strong relation between self-reported pain characteristics and a clinically confirmed diagnosis[33–35]; however, given the lack of a formal diagnosis, the term PVP is used to characterize the group with PVD-like characteristics in the present study.

Based on their responses to this online survey, participants were categorized into one of two groups (ie, women with PVP, n = 65; women with PHN, n = 30) by the first and third authors. The inclusion criteria for the PVP group were pain at the entrance of the vagina during intercourse (average pain score $\geq$ 3 of 10), a minimum pain duration of 6 months, and pain on at least 70% of intercourse occasions. Women with PVP symptoms who also reported other possible clinical reasons for their pain (eg, lichen sclerosus) or who reported subthreshold symptoms of PVP were excluded.[4] The inclusion criteria for PHN were a history of herpes zoster, pain after the shingles rash had healed (average pain score $\geq$ 2 of 10), and a minimum of 3 months since the most recent rash had healed or a minimum of 2 months since the most recent rash had healed paired with a pre-existing self-reported PHN diagnosis. Although it would have been ideal to include only participants who experienced more significant pain for a longer period, the challenges of recruiting participants with PHN to this study necessitated the use of less strict inclusion criteria. However, only two people reported an average pain intensity of 2 of 10, and only two reported that it had only been 2 months since their most recent rash had healed. Exclusion criteria for the two groups were age younger than 18 years, lack of fluency in English, and major medical, psychiatric, or other NP conditions that interfere with daily functioning (eg, diabetes, schizophrenia, trigeminal neuralgia).

Procedures

This study was approved by the university's general research ethics board. Participants were recruited through local pain clinics (for participants with PHN), print and online advertisements (eg, Facebook ads, electronic "banners" on newspaper websites), and postings to relevant websites and Listserv lists (eg, websites with information about PVD or PHN). Study advertisements indicated that this online study was designed to help further the understanding of complex, misunderstood pain conditions. Because those with PHN tended to be older, it was particularly challenging to recruit for an online study and extra efforts were made to recruit for this group (eg, collaborating with local pain clinics to share information about the study, placing advertisements in a magazine geared toward older adults).

Women interested in participating were directed to the survey link. Once participants reached the secure website (http://www.checkbox.com), read a letter of information, and consented to participate, they completed a detailed eligibility questionnaire that included questions on pain length, intensity, location, concurrent pain conditions, and self-reported diagnoses. After the eligibility assessment, participants answered different questions including several validated measures, typically taking 45 to 60 minutes. Once the survey was complete, participants read a debriefing form and had the opportunity to anonymously enter their e-mail addresses into a monthly draw for one of four prizes valued at $50 each. E-mail addresses were not linked to responses on the questionnaires. After completing or withdrawing from the