Pain, Medication Use, and Health-Related Quality of Life in Older Persons With Postherpetic Neuralgia: Results From a Population-Based Survey

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Abstract: **Persons aged >65 years with pain caused by postherpetic neuralgia (PHN) were recruited via advertisements in 24 US newspapers and were mailed a questionnaire that addressed pain intensity (average, worst, least, current), pain interference (with general activity, mood, relations with other people, sleep, enjoyment of life), and health-related quality of life (using the EuroQoL health measure [EQ-5D] and a global rating scale). Respondents also were asked about their use of medication for shingles pain. A total of 385 persons completed the survey; 61% were >75 years of age. Mean (±standard deviation) duration of PHN was 3.3 (±4.0) years. Only about one half had taken prescription medication for shingles pain during the prior week; dosages were typically low. Mean average, worst, least, and current pain caused by shingles (0- to 10-point scale) was 4.6 (±2.1), 6.0 (±2.4), 2.9 (±2.3), and 4.0 (±2.7), respectively. Mean pain interference with general activity, mood, relations with other people, sleep, and enjoyment of life (0- to 10-point scale) was 3.7 (±3.1), 4.3 (±2.9), 3.0 (±2.8), 3.8 (±2.9), and 4.5 (±3.1), respectively. The mean EQ-5D health index score was 0.61; respondents rated their overall health as 65.7 (±21.1) on a 100-point scale. PHN causes substantial pain, dysfunction, and poor health-related quality of life in older persons, many of whom might be suboptimally treated.**

Perspective: ***Many older persons (age >65 years) with PHN experience longstanding, severe, and debilitating pain and poor health-related quality of life; levels of dissatisfaction with treatment are high. Our study highlights the need for improved management of this disease.***

Key words: *Postherpetic neuralgia, pain, medications, health-related quality of life.*

Herpes zoster (shingles) is a common disease, with an estimated annual incidence of 2 to 3 cases per 1000 persons[19]; lifetime prevalence might be as high as 20%.[27] The characteristic rash is almost always accompanied by pain.[13,19] Postherpetic neuralgia (PHN) refers to pain that persists beyond the acute phase of the illness. PHN has been variously defined as pain persisting 1 to 4 months beyond the onset of the rash or after the crusting over of the skin lesions.[1,9,13]

Estimates of the proportion of shingles cases that results in PHN vary widely because of differences in case definitions and populations studied. At one end of the spectrum, in a study based on a chart review of herpes zoster cases coming to medical attention in a health maintenance organization, it was reported that 8% of patients have pain persisting 1 month after the onset of rash.[5] At the other end of the spectrum, among older patients randomized to placebo in a large double-blind clinical trial of oral acyclovir in the UK, the frequency of PHN was reported to be as high as 60%.[35] The risks of PHN after acute infection increase significantly with advancing age; it might be as high as 60% to 70% among those aged 60 years and older.[25] Approximately 50% of patients older than the age of 70 years have been reported to experience pain that persists for more than 1 year.[13] For many older persons, PHN is severe and debilitating and has significant effects on physical and social functioning and emotional health.[4]

Patients with PHN are treated with a wide variety of medications, including tricyclic antidepressants (eg, amitriptyline, nortriptyline), antiepileptics (eg, gabapentin, carbamazepine), and some of the newer antidepressants (eg, fluoxetine, bupropion), all of which have been reported to be effective in neuropathic pain.[13,14,16,21,22,23] In the US, only Lidoderm (topical lidocaine) and Neurontin (gabapentin) have been approved by the US Food and Drug Administration for the treatment of PHN.[27] PHN often does not respond well to medications that are used to treat nociceptive pain, including acetaminophen (APAP), nonsteroidal anti-inflammatory drugs (NSAIDs), and opioids.[13]

Although the multidimensional burden of PHN has been examined in prior research, study subjects typically

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have been patients presenting to their physicians for the treatment of herpes zoster.[4,17] Persons who seek medical treatment might be more likely to have severe pain, yet their pain might be better managed than those not receiving such care. Hence, generalizability of findings from earlier research to the larger population of persons with PHN, many of whom might not be under the active care of physicians, is unknown. We undertook a population-based study to explore this issue.

Materials and Methods

Study subjects were recruited using advertisements in 24 large-circulation daily newspapers throughout the US. The advertisements invited persons 65 years of age or older who were "suffering from persistent pain due to shingles (herpes zoster)" to participate in a research study. Those interested in participating in the study were asked to call a toll-free telephone number if their episode of shingles had occurred "three or more months ago".

Persons who called the toll-free telephone number were screened for eligibility by trained interviewers who administered a 15-item screening questionnaire that was developed specifically for use in the study. Callers were first asked about their age, gender, and the date when their shingles first occurred. They also were asked whether they had had a rash, and if so, its location and appearance to ascertain whether they actually had experienced an episode of herpes zoster. To determine whether they had PHN, 4 items asked callers whether they had experienced pain during the past 24 hours, the amount of pain they were currently experiencing, and the location and character of their pain.

Respondents were eligible to participate in the study if they (1) were 65 years of age or older, (2) reported an episode of herpes zoster at least 3 months previously, and (3) were currently experiencing pain caused by PHN. They were excluded from the study if they reported that they (1) did not have a history of rash; (2) had a rash that was red only and not followed by blisters and crusting over; (3) had a rash that was generalized ("all over"); (4) had a rash on their lips, genitals, hands, fingers, toes, or feet only; (5) had a rash on noncontiguous parts of their body; (6) had a rash on both sides of their body; (7) had pain in a location different from where their rash occurred; (8) did not experience pain during the past 24 hours; or (9) had aching or soreness in their joints.

Eligible persons who agreed to participate in the study were sent a survey packet via Express Mail, which included a cover letter explaining the purpose of the research, a copy of the questionnaire, and a prepaid return mailing envelope. Study subjects were informed that they would remain anonymous in all analyses of data, and that return of a completed questionnaire demonstrated their consent to participate in the study. Persons returning completed questionnaires were sent a $25 honorarium. Data collection spanned the period of May through August 2002. The study was approved by an Institutional Review Board.

Study subjects were asked about their shingles pain intensity using 4 items that were adapted from the Brief Pain Inventory.[6] Respondents were asked about their current pain caused by shingles, as well as their average, worst, and least pain caused by shingles during the week before study; response categories ranged from 0 ("no pain") to 10 ("worst pain possible").

Study subjects also were asked about the extent to which their shingles pain interfered with their general activity, mood, relations with other people, sleep, and enjoyment of life during the past week; response categories ranged from 0 ("did not interfere") to 10 ("completely interfered"). These items also were adapted from the Brief Pain Inventory.[6]

The EuroQoL health measure, the EQ-5D, was used to assess health-related quality of life. It consists of 5 items that address mobility, self-care, usual activities, pain/discomfort, and anxiety/depression, respectively.[3,20] Each item uses a 3-category response set, corresponding to no problems, some problems, and extreme problems in the area of interest. A weighted health index was calculated on the basis of the responses to these items using published preference weights derived from general population samples.[10] A score of 0 on this index represents "worst health", whereas 1.0 represents "perfect health".

Two global health rating scales were included in the questionnaire. The first asked respondents about their current overall health, and the second asked them to rate their overall health, given hypothetical complete relief of their pain caused by shingles. Responses to both items were based on a 0 to 100 scale, where 0 represented "worst possible health" and 100 represented "perfect health". The question asking for a rating of health, given hypothetical relief of PHN, was developed specifically for this study and was not independently validated. We used this approach to assess the perceived impact of PHN on respondents' valuation of their current health state because other approaches, such as the standard gamble method,[2] were too complicated for a self-completed questionnaire.

Study subjects also were asked whether they had taken any prescription (Rx) medication for PHN during the past week, and if so, which ones; to facilitate response, respondents were provided with a listing of the names of more than 300 Rx medications that we thought might have been used to treat PHN. Information on dosage and frequency of dosing was collected for respondents who reported that they had used amitriptyline hydrochloride (eg, Elavil, AstraZeneca, Wilmington, Del), carbamazepine (eg, Tegretol or Tegretol-XR, Novartis, Basel, Switzerland), or gabapentin (Neurontin, Pfizer, New York, NY). Respondents also were asked about all over-the-counter (OTC) (ie, nonprescription) medications that they had taken during the past week for their PHN, including aspirin (eg, Bufferin; Bristol-Myers Squibb, New York, NY; Anacin, Insight Pharmaceuticals, Blue Bell, Pa), acetaminophen (eg, Tylenol, Astra Zeneca, Wilmington, Del), ibuprofen (eg, Advil, Wyeth, Madison, NJ; Motrin IB, Acme United Corporation, Fairfield, Conn), DeWitt's powder (Monticello, Jacksonville, Fla), Excedrin (Bristol-Myers Squibb, New York, NY), Momentum (Whitehall