

Symptoms of Neuropathic Itch: A Report From the Neuropathic Itch Patient Survey (NIRVE)

Brian S. Kim, MD, MTR¹; Jennifer A. Mohawk, PhD²; Joshua Cirulli, PharmD²; Joana Goncalves, MD²; Joseph C. Punzalan³; Kevin M. Kelly, MSc³; Mark Lebwohl, MD¹

¹Icahn School of Medicine at Mount Sinai, New York, NY, USA; ²Cara Therapeutics, Stamford, CT, USA; ³AplusA Bell Falla, LLC, Newark, NJ, USA

SYNOPSIS

- Neuropathic itch arises from damage to neurons and may occur with or without pain and other sensory symptoms¹; data on patients' experiences with neuropathic itch are incredibly limited
- It is estimated that approximately 8% to 19% of chronic itch arises from neuropathic origins, but epidemiological data are sparse²
- In this international survey, we sought to identify patients suffering from neuropathic itch in an effort to better characterize their symptoms
- NIRVE was an online survey conducted globally from October 18 to December 2, 2022, and included adult participants experiencing neuropathic itch associated with a diagnosis of brachioradial pruritus, diabetic neuropathy/itch, notalgia paresthetica, post-herpetic neuralgia, prurigo nodularis, or small-fiber neuropathy
- The most common symptoms participants currently experienced were ranked as severe or extremely severe and included itch, tingling, sensitive skin, and numbness
- Visible symptoms of disease, such as cutaneous manifestations, were less common than physical sensations, such as itch
- Together, these data suggest that cutaneous symptoms related to neuropathic itch conditions are burdensome

OBJECTIVE

- In this international survey, we sought to identify patients suffering from neuropathic itch in an effort to better characterize their symptoms

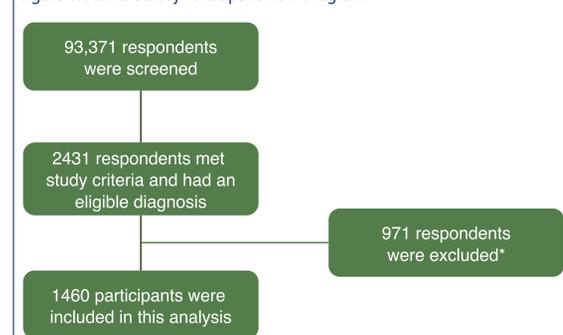
METHODS

- NIRVE was an online survey conducted globally from October 18 to December 2, 2022
- Adult participants (age ≥18 years [age ≥20 years in Japan]) experiencing neuropathic itch associated with a diagnosis of brachioradial pruritus, diabetic neuropathy/itch, notalgia paresthetica, post-herpetic neuralgia, prurigo nodularis, or small-fiber neuropathy were recruited from Canada, France, Germany, Italy, Japan, Spain, the United Kingdom, and the United States
- Eligible participants answered survey questions based upon the diagnosis they felt was most burdensome
- Survey topics included questions on:
 - disease severity
 - disease and diagnostic history
 - symptom burden
 - treatment experience
 - demographics
- This report focuses on the symptom burden of the participants

RESULTS

- Of the 93,371 survey respondents, 1460 participants were included in this analysis (Figure 1)

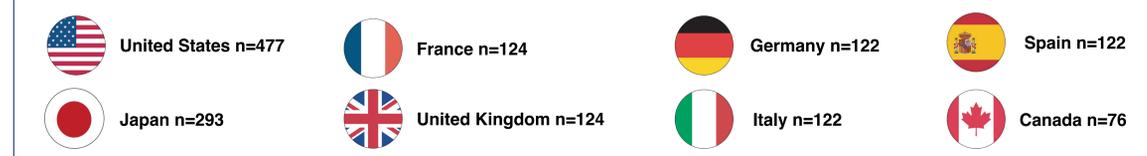
Figure 1. NIRVE Survey Participant Flow Diagram



* Respondents were excluded because they reported they had never experienced itch due to their neuropathic diagnosis.

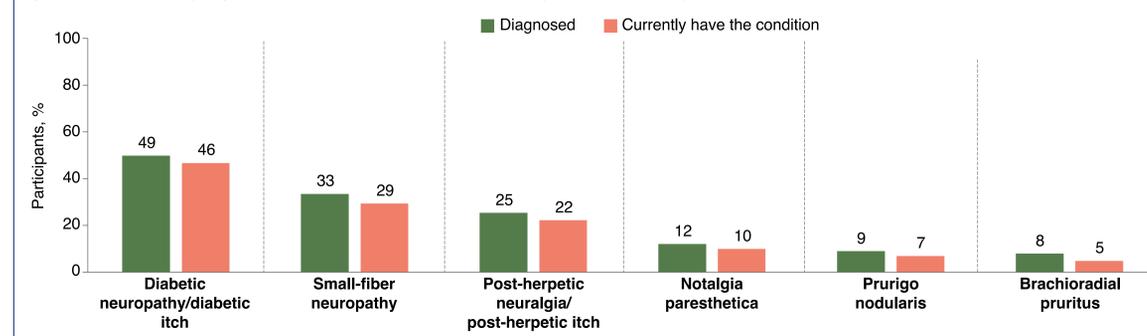
- The mean age of participants was 48.4 years
- Most participants were male (51%) and from the United States (n=477); Figure 2 shows the number of participants from each country

Figure 2. Most Participants Were From the United States



- The most common neuropathic itch condition reported was diabetic neuropathy, followed by small-fiber neuropathy, post-herpetic neuralgia, and notalgia paresthetica (Figure 3)

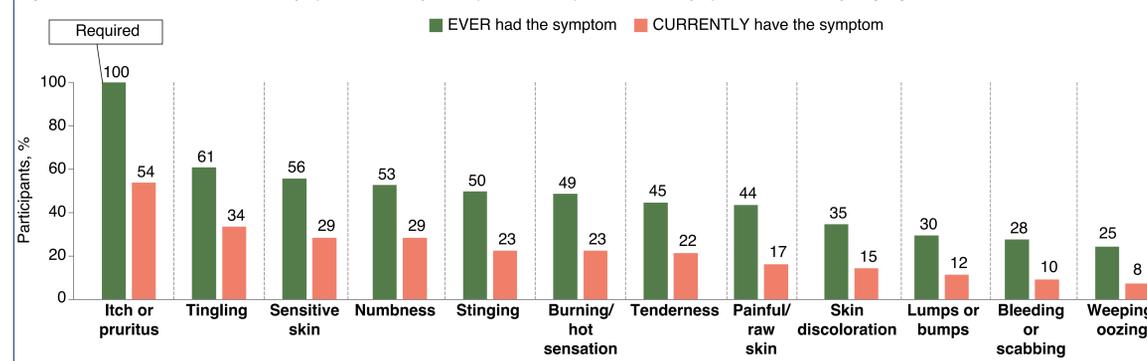
Figure 3. Diabetic Neuropathy/Diabetic Itch Was the Most Common Neuropathic Condition Reported



Questions participants responded to: Have you ever been diagnosed by a doctor, or other healthcare provider, to have any of the following conditions? You indicated you have been diagnosed by a doctor, or other healthcare provider, to have the following condition(s). Do you have the following condition(s)?

- The most common cutaneous manifestation experienced by participants (both ever and currently) was itch or pruritus, followed by tingling, sensitive skin, and numbness (Figure 4)
- More than half of participants surveyed who were currently experiencing any given cutaneous manifestation reported it to be severe or extremely severe in the past week (Figure 4)

Figure 4. Itch Was the Most Common Symptom for Survey Participants Who Experienced Skin Symptoms, Followed by Tingling, Sensitive Skin, and Numbness



Includes all participants who experienced skin symptoms (n=1385).

Question participants responded to: Which of the following skin symptoms have you ever had or currently have as a result of [your most bothersome condition]?

- While itch was experienced across all surveyed diagnoses, participants with diabetic neuropathy or small-fiber neuropathy were most likely to report they were currently suffering from other cutaneous manifestations (Figure 5)

Figure 5. Participants With Diabetic Neuropathy or Small-Fiber Neuropathy Were More Likely to Report They Were Currently Suffering From Cutaneous Symptoms Other Than Itch

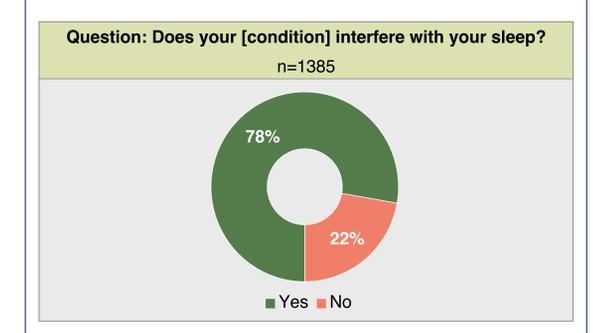
Symptoms CURRENTLY have	Diabetic neuropathy/diabetic itch n=589	Small-fiber neuropathy n=346	Post-herpetic neuralgia/post-herpetic itch n=263	Notalgia paresthetica n=87	Prurigo nodularis n=63	Brachioradial pruritus n=37
Itch or pruritus	57	57	51	40	41	54
Tingling	40	40	24	16	11	14
Sensitive skin	34	33	23	14	17	19
Numbness	39	34	10	21	10	11
Stinging	24	24	26	9	11	8
Burning or hot sensation	29	29	10	15	10	11
Tenderness	26	28	12	11	16	8
Painful or raw skin	21	16	10	20	17	8
Skin discoloration	19	14	13	8	17	5
Lumps or bumps	13	12	7	8	24	11
Bleeding or scabbing	13	9	6	3	14	16
Weeping or oozing	7	11	5	3	13	8

Includes all participants who experienced skin symptoms (n=1385).

Question participants responded to: Which of the following skin symptoms have you ever had or currently have as a result of [your most bothersome condition]?

- Of those participants currently experiencing cutaneous symptoms, 78% reported that their condition interfered with their sleep (Figure 6)

Figure 6. Greater Than 75% of Participants Currently Experiencing Cutaneous Symptoms Reported That Their Condition Interfered With Sleep



CONCLUSIONS

- Findings of the NIRVE survey provide new insights into the symptom burden and impact on quality of life associated with neuropathic itch conditions
- The most common symptoms participants currently experienced were itch, tingling, sensitive skin, and numbness
- For each symptom that participants experienced, more than half of participants ranked it as severe or extremely severe, with a very small minority reporting only mild symptoms
- Visible symptoms of disease were less common than physical sensations, such as itch
 - Cutaneous manifestations such as skin discoloration, lumps or bumps, bleeding or scabbing, and weeping/oozing were likely a result of scratching
- In addition, sleep interference from neuropathic conditions was common
- Together, these data suggest that cutaneous symptoms related to neuropathic itch conditions are burdensome
- Future studies and analyses should identify treatment goals for these patients

REFERENCES

- Stumpf A, Ständer S. *Dermatol Ther.* 2013;26:104-109
- Meixiong J, et al. *Cells.* 2020;9:2263

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CORRESPONDENCE

Brian Kim – Brian.Kim3@mountsinai.org

DISCLOSURES

BSK: KLIIRNA Biotech – founder. 23andMe, ABRAX Japan, AbbVie, Almirall, Amagma Therapeutics, Amgen, Arcutis Biotherapeutics, Arena Pharmaceuticals, argenx, AstraZeneca, Boehringer Ingelheim, Bristol Myers Squibb, Cara Therapeutics, Clexio Biosciences, Eli Lilly and Company, Escient Pharmaceuticals, Evomune, Galderma, Genentech, GlaxoSmithKline, Granular Therapeutics, Incyte Corporation, Innovaderm Research, Janssen, Kiniksa, LEO Pharma, Maruho, Novartis, Pfizer, Recens Medical, Regeneron Pharmaceuticals, Sanofi, Septerna, Vial, WebMD – consultant. ABRAX Japan, KLIIRNA Biotech, Locus Biosciences, and Recens Medical – stock. Use of JAK1 inhibitors for chronic pruritus – patent. Use of JAK inhibitors for interstitial cystitis – patent pending. AbbVie, Cara Therapeutics, LEO Pharma, and Veradermics – research grants. JAM, JC & JG: Cara Therapeutics, Inc. – employment. JCP & KMK: AplusA Bell Falla, LLC – employment. ML: AbbVie, Amgen, Arcutis, Avotres, Boehringer Ingelheim, Dermavant Sciences, Eli Lilly, Incyte, Janssen Research & Development, LLC, Ortho Dermatologics, Regeneron, and UCB – research funds; Aditum Bio, Almirall, AltruBio Inc., AnaptysBio, Arcutis, Inc., Aristeia Therapeutics, Arrive Technologies, Avotres Therapeutics, BiomX, Boehringer Ingelheim, Bristol Myers Squibb, Cara Therapeutics, Castle Biosciences, Corrona, Dermavant Sciences, Dr. Reddy's Laboratories, Evelo Biosciences, Evomune, Inc., Facilitation of International Dermatology Education, Forte Biosciences, Foundation for Research and Education in Dermatology, Helsinn Therapeutics, Hexima Ltd., LEO Pharma, Meiji Seika Pharma, Mindera, Pfizer, Seanergy, and Verrica – consultant.