Impact of Herpes Zoster Ophthalmicus on Healthcare Utilization and Patient Reported Outcomes: Results from a Multicenter Cohort Study

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Conclusions

HZO patients experienced significant clinical symptoms and required **substantial healthcare resources**, especially within the first three months post-onset.

HZO significantly affected patients' quality of life and mental health, with long-term impacts on vision-related quality of life despite a decrease in depressive symptoms and healthcare utilization over time.

Findings highlight the **need for timely preventive interventions** to **reduce the impact of HZO** and its associated **healthcare burden**.

Background

- Herpes zoster, commonly known as shingles, **can lead to herpes zoster ophthalmicus (HZO)**, which affects the eye and surrounding areas. **The frequency of HZO** out of all herpes zoster cases **in the United States (US) is 4.2% and ranges from 2.7% to 6.7% annually**, with older adults and immunocompromised individuals at higher risk.[1,2]
- HZO is a severe manifestation of herpes zoster happening when the ophthalmic branch of the trigeminal nerve is involved, and it could lead to **severe complications**. These complications often necessitate **long-term medical treatments** and frequent **follow-up evaluations**.[3]
- Patients with HZO often experience a **diminished quality of life** due to persistent symptoms and the need for lifestyle modifications. The chronic nature of the disease can also lead to significant **depressive symptoms**.[4,5]

Aim

The primary objective of this study was to **assess the burden of HZO in the US** by evaluating the **frequency and duration of specific complications**, the **prevalence of depressive symptoms**, the **impact on health-related quality of life**, and **healthcare resource utilization**.

Methods

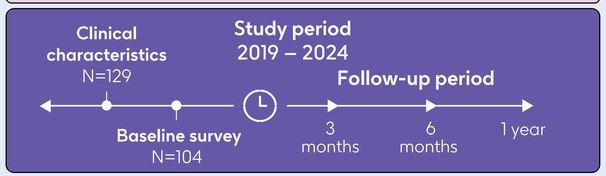
Real world observational prospective cohort study

Patient eligibility criteria

- Active clinical diagnosis of HZO (initial or recurrent)
- ≥18 years of age
- English or Spanish speaking

Patient exclusion criteria

- Simultaneous enrollment in a clinical trial focused on HZO



Dataset

6 US ophthalmologic practices
Eye Consultants of Northern Virginia, Geisinger Health System, Metropolitan Eye Research and Surgery Institute, Northeastern Eye Institute, University of North Carolina, Wills Eye Hospital

Total patients: 130 consented (one patient did not complete the clinical information form)

Complete data:
110 completed at least 1 survey

Validated patient-reported study instruments

- Eight-item Patient Health Questionnaire (**PHQ-8**) for assessment of severity of depressive symptoms[6]
- National Eye Institute 25-Item Visual Function Questionnaire (**NEI-VFQ-25**) for assessment of visual functioning (can be scored to health utilities)[7,8]
- Zoster Brief Pain Inventory (**ZBPI**) for assessment of pain items[9]
- Work Productivity and Activity Impairment-Specific Health Problem questionnaire (**WPAI-SHP**) for assessment of the impact of health problems on work productivity (presenteeism and absenteeism)[10]

Analysis

- Descriptive statistics
- Generalized linear mixed models examined changes in outcomes over time for healthcare utilization and PHQ-8

Results

Baseline demographics (N=104)

59.6% (n=62) female

Mean: **64.3 years (SD: 13.7)**

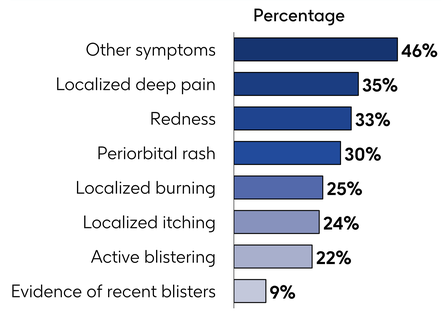
70.2% (n=73) initial HZO cases with **29.8% (n=31)** recurrent

28.8% (n=30) vaccinated against herpes zoster

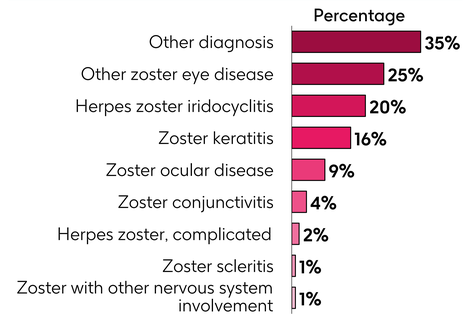
66.4% (n=69) White

Baseline clinical characteristics, healthcare resource utilization, and patient-reported outcomes

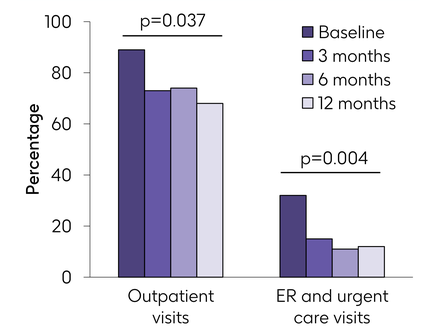
Clinical symptoms (N=110)[a]



Clinical diagnosis (N=110)[a]

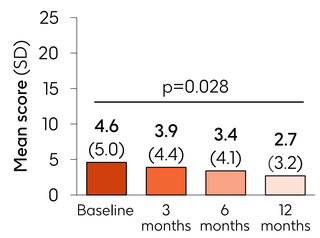


Healthcare resource utilization[b]

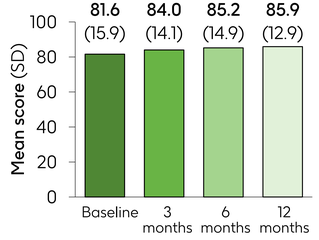


Patient-reported outcomes[b]

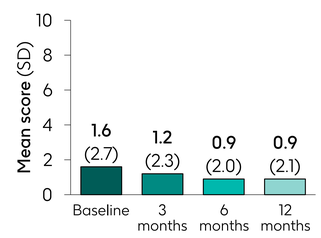
Depressive symptoms according to PHQ-8[b,c]



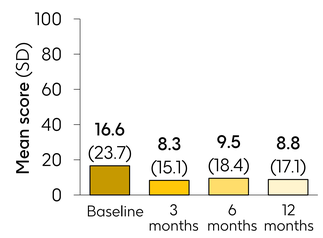
Vision-related quality of life according to NEI-VFQ-25[d]



Worst pain according to ZBPI[e]



Work productivity loss according to WPAI-SHP[f]



[a]104 patients completed the baseline survey while 110 patients completed at least one baseline or follow-up surveys (3, 6, or 12 months), the clinical characteristics are provided for 110 patients. See supplementary material (QR code) for additional details and data on clinical symptoms and diagnosis. [b]P-values are type-III p-values from multivariable regression analysis representing a significant difference between any of the time points. [c]Scores range from 0 to 24. Scores of 5, 10, 15, and 20 represent cutpoints for mild, moderate, moderately severe, and severe depression, respectively. [d]Scores range from 0 to 100. A high score represents better functioning. The scores should be interpreted as an achieved percentage of total possible score. [e]Scores range from 0 to 10. A high score represents worse pain severity from 0=no pain to 10=pain as bad as you can imagine. [f]Scores range from 0 to 100. Scores are expressed as impairment percentages, with higher numbers indicating greater impairment and less productivity.

Abbreviations

ER: emergency room; **HZO**: herpes zoster ophthalmicus; **N**: total number of patients; **n**: number of patients; **NEI-VFQ-25**: National Eye Institute 25-Item Visual Function Questionnaire; **PHQ-8**: eight-item Patient Health Questionnaire; **SD**: standard deviation; **US**: United States; **WPAI-SPH**: Work Productivity and Activity Impairment-Specific Health Problem questionnaire; **ZBPI**: Zoster Brief Pain Inventory.

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Digital poster
Supplemental data

Narrative summary

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