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HERPES ZOSTER OPHTHALMICUS: CLINICAL PROFILE IN ADULTS LESS THAN 30 YEARS OF AGE

HERPES ZOSTER OPHTHALMICUS: KLINICZNY PROFIL U DOROSŁYCH PONIŻEJ 30-go ROKU ŻYCIA

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Abstract
Introduction: To establish the clinical profile of Herpes Zoster Ophthalmicus (HZO) in individuals less than 30 years of age and to correlate clinical manifestation with their immune status. **Materials and methods:** A retrospective chart review was performed of patients younger than 30 years of age who presented with HZO from June 2010 to June 2011. Data was collected on their demographics, medical history, clinical presentation, results of serological investigations, and visual outcome. A detailed evaluation of clinical profile with ocular implications and a sequel was done in each case. **Results:** The mean age of the patients was 23.25 years. Ophthalmic features presented included lid edema, ptosis, keratitis, and superficial punctate keratitis with dry eye, optic neuritis. None of them was found to be HIV positive. Final visual acuity was 20/40 or better in 90% of the subjects. **Conclusion:** Immunocompetent young adults do present with features of HZO. However, the disease spectrum in HIV-negative patients is localized, less severe, and more amenable to therapy.

Streszczenie
Wstęp: Celem pracy było stworzenie klinicznego profilu postaci ocznej półpaśca u osób poniżej 30-go roku życia oraz skorelowanie objawów klinicznych z poziomem odporności tych osób. **Materiał i metody:** Wykonano retrospektywną analizę historii chorób u pacjentów poniżej 30-go roku życia z rozpoznaniem ocznej postaci półpaśca. Zebrano dane dotyczące demografii, przebytych chorób, klinicznych objawów, wyników badań serologicznych oraz badań okulistycznych. Dokładna ocena klinicznego profilu z implikacjami okulistycznymi i dalszymi ich następstwami była przeprowadzona w każdym przypadku. **Rezultaty:** Średnia wieku pacjentów wynosiła 23,25 lat. Prezentowane objawy okulistyczne obejmowały obrzęk powiek, opadanie górnej powieki, zapalenie rogówki oraz powierzchowne, punktowane zapalenie rogówki z zespołem suchego oka a także zapalenie nerwu wzrokowego. Żaden z pacjentów nie był HIV- pozytywny. Końcowa ostrość widzenia wynosiła 20/40 lub powyżej u 90% pacjentów. **Podsumowanie:** Młodzi immunokompetentni dorośli także zapadają na oczną postać półpaśca. Jednakże spektrum choroby u osób HIV-negatywnych jest ograniczone, mniej ciężkie i bardziej podatne dla terapii.

Key words: herpes zoster ophthalmicus; Human Immunodeficiency Virus infection; immune status; young adults
Słowa klucze: herpes zoster ophthalmicus; infekcja ludzkim wirusem niedoboru odporności; stan odporności; młody dorosły

Introduction

Herpes Zoster Ophthalmicus (HZO) is a serious infection because of its implications on vision and the cosmetic blemish it leaves in addition to the distressing post herpetic neuralgia. Herpes Zoster is caused by the reactivation of the Varicella–Zoster virus lying dormant in the spinal or cerebral sensory ganglia and is commonly seen in patients with depressed cellular immunity, such as the elderly, patients on immunosuppressive therapy, and patients with lymphoma or positive HIV status [1,2]. The incidence and severity of Herpes Zoster increases with advancing age, especially after the seventh decade [3]. The pain associated with Herpes Zoster can be debilitating, with a serious impact on the quality of life, and the economic costs of managing the disease represent an important burden on both health services and society [4].

With the emergence of the Acquired Immune Deficiency Syndrome (AIDS) pandemic, adults younger than 45 years of age are increasingly presenting with Herpes Zoster due to HIV [5]. The relative risk of Herpes Zoster is at least fifteen times greater in patients with HIV than

in patients without HIV [6]. Studies indicate that the occurrence of HZO in young individuals correlates strongly with immunosuppression. The present study was undertaken to highlight the clinical profile of (HZO) in young adults who are less than 30 years of age.

Materials and methods

A retrospective analysis of available records of young adults (less than 30 years of age) with HZO was performed. Clinical features, results of blood laboratory workup, and treatment prescribed were noted. The median duration of follow up was nine months.

Results

The clinical data of eight young adults presenting with features of HZO were evaluated. Their average age was 23.25 years (range, 13-28 years). There was a predominance of males (62.8%) among the young adults presenting with HZO (Tabl. I).

None of the subjects in our study had a history of varicella vaccination. All of them had a history of chicken pox in childhood.

The clinical features are summarized in (Tabl. II). All subjects presented with skin lesions consistent with zoster involving the ophthalmic division of the trigeminal nerve on the affected side (right side affected in 75% subjects) of the face and head. It was limited to the ophthalmic division in all subjects. Results of other systemic investigations including a complete hemogram with peripheral smear, blood sugar profile, and serological tests for HIV,VDRL and Hepatitis B and C were negative for the all the subjects. There was no evidence of any co-existing systemic disease in any of the individuals. Serological tests were repeated in four previously negative subjects six months after their first test. The repeat test was negative in each case. Visual acuity was impaired in all subjects, the extent of impairment ranging from 20/400 to 20/60.

Age	Gender	Occupation
13	Female	Student
22	Male	Shop keeper
28	Male	Labourer
26	Male	Truck driver
28	Male	Farmer
25	Male	Farmer
22	Female	Housewife
23	Female	Housewife

Table I. Demographic profile and immune status of young patients with HZO

Case	Initial BCVA	Lid edema	Corneal findings	Corneal sensation	Uveiitis	Posterior segment findings	Final BCVA
1	20/60	+	Punctate keratitis	-	-	-	20/20
2	20/60	+	Dendritic keratitis	+	-	-	20/20
3	20/400	-	-	-	-	Optic neuritis	20/30
4	20/400	-	-	-	-	Optic neuritis	20/60
5	20/80	-	Dendritic keratitis	+	-	-	20/20
6	20/60	-	Punctate keratitis	-	-	-	20/20
7	20/60	-	Punctate keratitis	-	-	-	20/20
8	20/400	-	Punctate keratitis	-	++	-	20/40

Table II. Ocular features at presentation and final visual acuity in young adults with HZO

Conjunctival hyperemia and lid edema ranging from mild to severe was observed in all subjects in the acute phase. Corneal involvement was seen in 7(87.5%) of the 8 subjects in the form of dendritic keratitis (25%), punctate keratopathy (50%) and stromal keratitis (12.5%). Corneal sensitivity was abnormal in 75% of the cases. One of the eight patients (12.5%) presented with uveal inflammation. Evaluation of the posterior segment showed optic neuritis in12.5%(1/8) of the patients. Nebulomacular corneal opacities was seen in 50% (4/8) of the patients. All the subjects with active HZO were prescribed 800mg of oral acyclovir five times a day for 2 weeks.

Discussion

Herpes zoster is uncommon in adults younger than 30 years of age and the peak incidence occurs in the fifth to the seventh decade of life. The annual incidence of Herpes Zoster in adults 20–40 years old is 1.2 per 1000 person year compared with 9.4 per 1000 person-year in adults above 80 years of age in the United States [7] Similarly, the incidence of Herpes Zoster in the European primary care population was the lowest in young adults (1.9/1000 person-years in persons less than forty four years old) [8]. The disease spectrum and clinical features in adults younger than 30 years of age has not been extensively described. Our study highlights the clinical and demographic profile of HZO in this age group and also aims to correlate the clinical manifestations and final outcome of vision with the immune status.

Clinically, many believe that the occurrence of HZO at such a young age is associated with an underlying HIV infection [9]. The normal spectrum of HZO in immunocompetent individuals has been described by Zaal et al [10] where 23 patients were younger than 50 years of age and 50 patients were older than 50 years. In the prospective study by Zaal et al [10]. immunocompetent young adults (<50 years) formed 31% of the study group, but their unique clinical features and disease spectrum were not highlighted. HZO has also been reported in immunocompetent, healthy children with a favorable outcome [11]. In the study by Gupta et. al [12], 56% of the cases had no clinical evidence of immunosuppression. In our study none of the subjects had any immunosuppression or any systemic disease. Half of them had exposure to chickenpox virus.

All the patients presented with a localized, less severe form of the disease with better response to medical therapy. The main cause of moderate to severe visual loss at presentation in the young, patients was optic neuritis and stromal keratitis, but it was reversible with an early course of pulse intravenous steroids and aggressive antiviral therapy. Some degree of reduced corneal sensitivity was present in the majority (70%) of the immunocompetent patients without any associated long-term morbidity. This hypesthetic corneal surface, often with impaired tear secretion, predisposes the cornea to secondary infections. However, no superimposed bacterial infection was found in the group despite the diminution of corneal sensation in 70% of these subjects.

None of the subjects presented with Post Herpetic Neuralgia (PHN). This correlates with the study from Iceland [13], which demonstrated variations in risk of developing PHN with different age groups and in that study patients younger than 50 years never developed severe pain at any time.

Conclusion

Our study outlines the spectrum of HZO in young adults who are immunocompetent. No study has been reported of HZO in young immunocompetent adults less than 30 years of age. The lack of Cell Mediated Immunity (CMI) is a significant factor in triggering Herpes zoster. While CMI is definitely compromised in immunocompromised individuals, several other factors such as malnutrition or prior infection (such as typhoid) can also lower CMI and increase the risk of virus reactivation even in young adults who are otherwise clinically healthy. Yet another trend observed was that prompt diagnosis and early intervention is effective in healthy patients.

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