Original article

Study on Morphological and Clinical Characteristics of Herpes Zoster In A Tertiary Medical College Hospital

Uddin MR[1], Bhuiyan MMH[2], Akhter F[3]

Abstract

Herpes zoster is caused by reactivation of VZV (varicella zoster virus) following primary infection or vaccination. VZV remains latent in sensory dorsal root ganglion cells. The virus begins to replicate in some later time, traveling down the sensory nerve into the skin. Forty one cases (3 children and 38 adults) of Herpes Zoster were assessed over a period of three and half years. Structured questionnaire, check-list and face-to-face interview were used as tools of data collection. The prevalence of herpes zoster amongst Skin & Eye OPD cases were found 0.60 percent. Maximum cases (23; 63.41%) were above 45 years of age. The male female ratio was 1.4:1.0. By socioeconomic status maximum patient from middle class (13; 31.70%), followed by poor (12; 26.26%) and very poor (11; 26.82%). Prodromal syndrome in maximum cases was paresthesia (13; 31.70%) and pain (11; 26.82%). Cases were mostly presented with pain (35; 85.36%). Twenty-three cases had classic herpes zoster followed by necrotic or ulcerated herpes zoster (16 cases) and hemorrhagic herpes zoster (2 case). Trigeminal dermatome was the most common involvement in 18 cases (43.9%) followed by thoracic dermatome 16 cases (39.02%). Unidermatomal involvement was seen in 97.56% cases (40) followed by multidermatomal 1 case (2.43%). Nine cases were screened for HIV-1 by ELISA, but none was detected as seropositive. . The analysis and findings put this recommendation that large scale study needed to examine the correlation ship between VZV infection and socioeconomic status of patients.

Keywords: *Herpes Zoster, Pain in Herpes Zoster, HIV.*

Introduction

Herpes zoster is caused by reactivation of VZV (varicella zoster virus) following primary infection or vaccination. VZV remains latent in sensory dorsal root ganglion cells. The virus begins to replicate in some later time, traveling down the sensory nerve into the skin[1]. Herpes zoster occurs sporadically throughout the year without seasonal prevalence. Most common factor is diminishing immunity to VZV with advancing age, with most cases occurring in those 55 years. Other risk factors are immunosuppressant condition such as malignancy, radiotherapy, HIV/ AIDS etc. But most cases triggering factors are not known[2]. The incidence of complicated and atypical Herpes zoster has increased due to increasing prevalence of HIV infection and drug induced immunocompromized states. The condition is benign and self-limiting in patients with normal immunological status. Entry of VZV is through the mucosa of the upper respiratory tract and osopharynx. Initial multiplication at this portal of entry results in dissemination of small amounts of virus via the blood and lymphatic (the primary viremia). During the course of varicella, VZV passes from lesions in the skin and mucosal surfaces into the contagious ending of the spinal nerves and is transported centripetally up the sensory fibers to the sensory ganglia. Where it remains in latent stage[2]. On reactivation, it travels back along the sensory afferents to the skin associated with hematogenous dissemination. Depending upon the rapidity of immune response, the presentation may vary from no clinical lesion to typical zoster, scattered vesicles, zoster sine herpete, disseminated zoster or chronic stages[3]. Reactivation may be triggered by diminishing immunity to VZV with advancing age with most cases occuring in those 55 years, malignancy, radiotherapy, HIV/AIDS, immunosuppression, especially lymphoproliferative disorders and demotherapy[4]. We underhook this study to know the socio-economic, morphological, clinical characteristic of Herpes Zoster.

1. Dr. Md. Rokon Uddin
Assistant Professor and Head, Department of skin & VD
Enam Medical College & Hospital, Savar, Dhaka.

2. Dr. Md. Motahar Hossain Bhuyain
Associate Professor & Head, Department of Ophthalmology,
Enam Medical College & Hospital, Dhaka.

3. Dr. Farzana Akhter, Junior consultant, Skin & VD
Upozila Health Complex, Savar, Dhaka.

Material and Methods

The study period was September 2006 to March 2010 selecting among all patients attened at the department of Skin & VD and Ophthalmology at Enam Medical College & Hospital, Savar, Dhaka. The cases of Herpes Zoster were screened and selected as study population. Patients' demographic data, monthly income, clinical symptoms, location of lesions, character of lesions, risk factors, associated systemic disease and complications were noted through structured questionnaire and checklists. . Diagnosis

was established by history and clinical examinations. Blood collected form all sample for routine examinations to exclude risk factors. In high risk cases, blood sample was taken for HIV serology with proper consent and counseling. The data was tabulated and analyzed manually and computed by SPSS program.

Results and Findings

Fourty one cases of Herpes Zoster were recorded form September 2006 to March 2010. A total 6813 new cases attended Skin & VD and Ophthalmology OPD during the study period, thus the prevalence of Herpes Zoster were 0.60 percent. The Herpes zoster cases included 3 children (2 male, 1 female) and 38 adults (22 males, 16 female).The mean age at presenting was 51.58 years with the range form 2.5 to 88 years. Male to female sex ratio was 1.4:1.0. Out of three children one children was in the age group of 0-4 and others were in 5-12 years. In adults (12;29.26%) cases were in age group of 13-45 years, (11;26.82%) cases in age group of 46-75 years and (15;36.58%) cases were in extreme age group (above 75 years). Occupation of these patients were mostly housewives 15 (36.58%) followed by farmers 10 (24.39%), others (21.95%) and students 7 (17.07%). Family income of the cases ranked in 'middle' socioeconomic class 13 (31.70%), in 'lower' 12 (29.26%) and 11 (26.82%) were in 'very low' socioeconomic class. However 5(12.19%) cases were from 'higher socioeconomic' group. [Operational definitions of socioeconomic classes were : Rich= >25000 BDT/month, Middle = 10000~25000, low =3000~10000, very low = <3000]. The lead time of presentation was 4.95 days. Majority of cases presented between 0-5 days (29; 70.73%), followed by 7 cases between 6-10 days(17.07%) and rest five cases between 11-20 days (12.19%). Prodromal symptoms recorded in thirteen (31.70%), pain eleven (26.82%), watering from eye in eleven (26.82%), tenderness in eight (19.51%),burning in seven (17.07%), headache and fever in five (12.19%) and malaise in one case (2.43%). Most common presenting complaint was pain thirty-five cases (85.36%) followed by localized itching (5 cases). Commonest type of pain was burning in nature (21; 51.21%) followed by stabbing type (9 cases) and pricking (5 cases).Out of all sample, twenty-three cases were having classic Herpes Zoster (15 males and 8 females). Sixteen cases had neurotic or ulcerative lesion (7 males and 9 females) and two cases had hemorrhagic lesions. (One female).

Dermatomes involved in Herpes Zoster

Trigeminal nerve was most commonly involved eighteen cases (43.90%). Thoracic dermatomes were most frequently involved in males than females .Sixteen cases (39.02%) were below 50 years of age and twenty-five cases above 50 years. Cervical dermatomes were more frequently involved in patient less than 50 years (4 cases). In twenty-four cases (58.33%) lesions of herpes zoster were seen on right side of the body and in seventeen cases (41.63%) on left side.

Risk factors in Herpes Zoster

Five cases having risk factors for herpes zoster. Out of five, three cases had chemotherapy and two on corticosteroid therapy .

Associated disease

Systemic disease involvement of herpes zoster were found with diabetes mellitus in nine cases, pulmonary tuberculosis 1 case, 1 case thalassemia and 1 case with chronic renal failure.

Complications

Secondary infections seen in 14 cases(34.14%) , followed by post herpetic neuralgia (PHN) in 4 cases (9.75%) , scarring of cornea in 4 cases (9.75%) , keratitis developed in 5 cases (12.19%) and dry eye developed in 4 cases (9.75%)

Discussion

Herpes zoster is common among immunocompromised persons. So the elders are in particularly in risk, because immunocompetence declines with age. Jain S,[5] reported that zoster afflicts 20% of general population, during their life time, especially in elderly[5]. More than two thirds of the reported cases occur in individuals over fifty years age less than 10 percent occur in those under the age of 20 years. Sharma and Mendiratta at the Kalawati Savan children's hospital found that 5.2% of cutaneous viral infections were herpes zoster[6]. Our study found elderly 63.41% (above 45 years) and children (under 12 years) 7.33% which were reflects the similarity closely. The average age at presentation in our study was 51.58 years which is very close to the findings of Goh and khoo[7]. Fifteen (36.58%) of our cases were above 75 years which is very close to the above study. Twenty-three (56.09%) patients came from low to very low socioeconomic status and among them 36.58% patients were housewives by occupation. This reflect poor nutrition and housing play major role in HZ infection. In our study, trigeminal nerve was involved in 18 cases (43.90%) followed by thoracic dermatome in 16 cases (39.02%) , lumber in 3 (7.31%) and cervical 4 (9.75%). In the study by Goh & Khoo[7] where dermatomes most commonly involved were thoracic in 45% and cervical in 23% which is reverse in case of trigeminal nerve involvement and nearer for the case of thoracic involvement. Tyndall[8] in their study found that the duration of zoster was longer (32 vs 22 days) and patients were more likely to have generalized lymphadenopathy (74% vs 3%), severe pain (69%), bacterial super infection (15%) and more than one dermatome (38% vs 18%) affected. In our study most common prodermal symptom in thirteen (31.70%), pain eleven (26.82%), watering from eye in eleven (26.82%) , tenderness in eight (19.51%),burning in seven (17.07%), headache and fever in five (12.19%) and malaise in one case (2.43%). Most common presenting complaint was pain

thirty-five cases (85.36%) followed by localized itching (5 cases); twenty-three cases (56.09%) presented with classic Herpes Zoster and sixteen cases had necrotic or ulcerative lesion. 100% cases were unidermatomal involvement one patient had hemorrhagic lesions.

This case-specific time-bound study revealed that herpes zoster commonly occurs in older age group with presenting symptoms such as pain, itching and fever. Most common pain was burning in nature. The occurrence of hemorrhagic, crosted and ulcerated lesions is possible in herpes zoster. Trigeminal dermatome was most frequently involved dermatome instead of thoracic dermatome. Basis on the findings, the researchers put forward following recommendations.

- Large scale study needed to examine the correlation ship between VZV infection and socioeconomic status of patients.
- Further study should be taken to establish that complications and morbidity due to HZ can greatly be minimized by early diagnosis and treatment.
- If young patient presents HZ with any suspicion, HIV serological test should be done routinely.

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