

Frequency of Undiagnosed Diabetes Mellitus in Patients with Herpes Zoster

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ABSTRACT

Aim: To determine the frequency of undiagnosed diabetes mellitus in patients with herpes zoster.

Study design: It was a descriptive cross sectional study.

Duration of study: From January 2012 to June 2012.

Material and method: All diagnosed cases of herpes zoster of either gender, ≥ 18 years of age enrolled from the Department of Dermatology, Military Hospital, Rawalpindi.

Result: Majority of the patients i.e., 59(59%) having >50 years of age, 62(62%) were male while frequency of undiagnosed diabetes mellitus in patients with herpes zoster was recorded in 44(44%) of cases while 56(56%) had no findings of undiagnosed diabetes mellitus.

Conclusion: The frequency of undiagnosed diabetes mellitus is higher among patients with herpes zoster. So, it is recommended that every patient who present with herpes zoster, should be sort out for diabetes mellitus. However, it is also required that every setup should have their surveillance in order to know the frequency of the problem.

Keywords: Herpes zoster, undiagnosed diabetes mellitus, frequency

INTRODUCTION

Herpes zoster (or simply zoster), commonly known as shingles, is a viral disease characterized by a painful skin rash with blisters in a limited area of the body, often in a stripe. This is produced by reactivation of latent varicella zoster virus (VZV) from the dorsal root ganglion of sensory nerves commonly seen in the elderly, but it may also present in younger patients or after intrauterine infection¹.

In the United States, herpes zoster occurs in nearly one million individuals annually, causing substantial morbidity². The cumulative lifetime incidence is approximately 10 to 20% of the population³. Incidence rates progressively increase with age, presumably due to the decline in VZV-specific cell-mediated immunity^{2,4}.

Diabetes mellitus (DM) comprises a group of metabolic disorders that share the phenotype of hyperglycemia. The incidence of DM has increased in the past two decades. Individuals with DM have a greater frequency and severity of infections. Several rare infections are seen almost exclusively in diabetic population. The reasons for this include abnormality in cell mediated immunity and phagocyte functions associated with hyperglycemia⁵.

Undiagnosed DM especially type 2 is common, with an estimated lag of five to seven years between the onset of the disease and diagnosis. It is

estimated that up to fifty percent of people are unaware of their disease. Incidence of undiagnosed DM increases with age. The size of the undiagnosed fraction of adults with diabetes is a major public health concern, heightened by the evidence that the latent stage is likely to be long, and that diabetes-related complications may develop⁶.

In our daily clinical practice, we deal with a great number of patients suffering with herpes zoster virus, most of them presenting with diagnosed diabetes mellitus while a significant portion is undiagnosed diabetes mellitus, however, we planned this study so that the frequency of undiagnosed diabetes mellitus may be recorded in patients with herpes zoster.

MATERIAL & METHODS

A total of 100 diagnosed cases of herpes zoster coming to Department of Dermatology Military Hospital, Rawalpindi during January 2012 to June 2012 were enrolled in the study. Patients with age ≥ 18 years of either gender were included in the study. Patients with previous history of diabetes mellitus and those with known immunosuppressive disorders (HIV infections, chemotherapy, transplantation, neoplastic disorders), and those who receiving drugs that increases blood glucose level (Corticosteroids, beta blockers, thyroid hormones, thiazides) were considered to be in exclusion criteria. Informed consent from the patients was obtained to include their data in the study. Demographic information of patients' including symptoms,

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dermatome involved, associated systemic disease and complications were noted on a pre-designed proforma. CDC guidelines 2005 alongwith history and clinical examination were followed for diagnosis of the disease. All individuals having no history of presence of diabetes were evaluated for diabetes mellitus.

Each individual's twelve hours fasting blood sample was taken for measurement of FPG using standard laboratory test. Subjects were considered as having undiagnosed diabetes when FPG level was equal or over 126 mg/100 ml.

The data were saved and analyzed in SPSS version 16.00. The frequency and percentage of undiagnosed diabetes mellitus by evaluating FPG levels was recorded and presented. The frequency and percentage was also calculated for gender distribution. The mean and standard deviation was calculated for age.

RESULTS

Age distribution of the patients was done which shows that 17(17%) were between 18-30 years, 24(24%) between 31-50 years and 59(59%) had >50 years of age, mean±sd was calculated as 39.43±5.32 (Table 1). Gender distribution of patients is presented in Table 2, where 62(62%) were male while remaining 38(38%) were females (Table 2). Frequency of undiagnosed diabetes mellitus in patients with herpes zoster was recorded in 44(44%) of cases while 56(56%) had no findings of undiagnosed diabetes mellitus (Table 3)

Table 1: Age Distribution of the subjects (n=100)

Gender	n=	%age
18-30	17	17
31-50	24	24
>50	59	59

Mean±SD: 39.43±5.32

Table 2: Gender distribution (n=100)

Gender	n=	%age
Male	62	62
Female	38	38

Table 3: Frequency of undiagnosed diabetes mellitus in patients with herpes zoster (n=100)

Undiagnosed diabetes mellitus	n=	%age
Yes	44	44
No	56	56

DISCUSSION

Herpes-zoster (HZ) or shingles is a fairly common infectious disease. Prior to the introduction of the varicella vaccine, the prevalence of naturally occurring infection was greater than 90% of the

populations in the Western world⁷. After an acute VZV infection, latent infection is established in the sensible ganglia. Older individuals, patients with neoplastic diseases (especially lymphoproliferative cancers), immunocompromised patients, and persons who are seropositive for human immunodeficiency virus (HIV) are at increased risk of HZ due to their altered cell-mediated immunity⁸.

Diabetes mellitus (DM) is often accompanied by impaired cell-mediated immunity and previous studies have shown the DM patients have infections more often than DM-free individuals⁹. The loss of cell-mediated immunity probably correlates with the duration of DM and impaired glycemic control.¹⁰ Therefore, DM patients, and particularly patients with long-standing DM and poor glycemic control, are expected to have an increased risk of HZ¹¹⁻¹².

In this study, we investigated the frequency of undiagnosed diabetes mellitus in patients with herpes zoster. Age distribution shows majority of the patients i.e. 59(59%) having >50 years of age, 62(62%) were male while frequency of undiagnosed diabetes mellitus in patients with herpes zoster was recorded in 44(44%) of cases while 56(56%) had no findings of undiagnosed diabetes mellitus.

The findings of our study regarding frequency of undiagnosed diabetes mellitus is in accordance with an Indian study who determined that whether undiagnosed DM is more common in patients with HZ than in those without it and recorded that 35.9% of patients with HZ and 19.7% of the control group had DM. There was significant association between HZ and undiagnosed DM (OR=2.28, 95% CI: 1.28–4.06)¹³.

In another study it was found that among 140 patients with HZ, 13.5% of patients had DM, which is significantly higher than general incidence of 2%. While on stratification with regards to age of the patients, over 50 years old, the incidence goes up to 17%¹⁴. In Cerny study 12 patients with recurrent HZ were evaluated. Three of the patients had DM¹⁵. In 31 cases of HZ with neurological complications; smoking with diabetes was the putative risk factors in 53%¹⁶.

Another study indicates that type 2 Diabetes mellitus is associated with an increased risk of HZ (OR=1.53; 95% CI: 1.44-1.62)¹⁷ which shows that diabetes mellitus is a Risk Factor for Herpes Zoster Infection.

Another local study¹⁸ who determine the frequency and pattern of herpes zoster at Liaquat University Hospital, Hyderabad and recorded diabetes mellitus being the most common systemic diseases seen among others in association with herpes zoster.

However, it indicates that the frequency of undiagnosed diabetes mellitus in patients of herpes zoster is significantly higher we should make earlier diagnosis of diabetes mellitus possible so that proper management could be started on time and complications can be avoided.

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