PREVALENCE OF HEPATITIS B SURFACE ANTIGEN CARRIER STATE IN PATIENTS WITH LICHEN PLANUS–REPORT OF 200 CASES FROM LAHORE, PAKISTAN

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Background: To determine the prevalence of hepatitis B surface antigen carrier state in patients with lichen planus. **Methods:** A quasi experimental cross sectional study was done at Department of Dermatology, Shaikh Zayed Federal Postgraduate Medical Institute, Lahore, Pakistan, from April 2003 to March 2005. Two hundred clinically diagnosed cases of LP and equal number of patients with other dermatoses not reportedly associated with hepatitis B virus (HBV) infection (control group) were collected from Skin Out Patient Department. They were screened for hepatitis B surface antigen (HBsAg) by Enzyme Linked Immunosorbent Assay (ELISA). Statistical analysis was done by using SPSS package version 11. **Results:** Out of 200 patients of each group, three patients with LP and seven patients from control group were positive for HBsAg. The test of significance for proportions revealed that there was no significant difference (p>0.1) between two groups. **Conclusion:** No association between HBsAg carrier state and LP was found in our study.

Key Words: Lichen Planus; Hepatitis B surface antigen.

INTRODUCTION

Lichen planus (LP) usually a self-limited papulosquamous eruption, is characterized by pruritic violaceus papules commonly affecting the glabrous skin, mucous membrane, nails and hair. The aetiology of LP is still unknown and is probably multifactorial. Current concepts about the pathogenesis of LP include genetic[1] and immunological factors.[2,3] Other factors like familial tendency,[4] disease affecting monozygotic twins,[5] HLA association,[1] carbohydrate intolerance,[6] drugs,[7] anxiety and depression[8] have also been suggested.

An association of LP with liver disease is now well established.[9,10] An increased prevalence of LP has been reported in patients with primary biliary cirrhosis,[11] chronic active hepatitis,[12] cirrhosis[13] and Hepatitis B[14-16] and C viral[17-21] infections.

Hepatitis B virus has been associated with a number of hepatic and extra hepatic manifestations. It is a member of hepadna virus family and is mainly transmitted through blood and blood products. Vertical transmission to neonates and 'nonparenteral' transmission through fomites infected with various body fluids are other modes of transmission of virus. There are at least 350 million carriers of HBV world wide.[22] The global prevalence of chronic HBV infection varies from ≥8% in Africa, Asia and Western Pacific to <2% in Western Europe, North America and Australia.[23] In Pakistan prevalence of carrier of HBV is 2.11% to 10%.[24-29]

The incubation period as defined by the time between exposure and appearance of clinical jaundice is between 30 and 130 days. The serologic incubation period, the time between exposure and appearance of hepatitis B surface antigen in the serum as detected by radio immune assay, is as early as 6 days[30,31] and rarely persists for more than 4 months.

The clinical spectrum of HBV infection ranges from acute to chronic hepatitis, cirrhosis and hepato-cellular carcinoma.

Dermatological syndromes associated with HBV infection include: serum sickness-like syndrome, polyarteritis nodosa, essential mixed cryoglobulinemia and papular acrodermatitis of childhood. Additionally, a wide spectrum of other skin changes include palpable purpura, Henoch-Schonlein purpura, erythema multiforme, toxic erythema and a lichenoid dermatitis resembling lichen planus clinically and histologically.[32]

Prevention as well as early detection of HBV infection is important to prevent the dreadful hepatic and extrahepatic effects of this organism.

There are many reports from different regions of world suggesting[14-16] and negating[33-36] the concept of association of HBV infection and LP. Since the first case published in 1990,[37] many cases of LP occurring after hepatitis B vaccine have been reported.[38-40]

The present study was carried out to ascertain the association of LP and HBV infection in our population.

PATIENTS AND METHODS

Two hundred clinically diagnosed cases of LP of any age and either sex and equal number of controls having other dermatoses not reportedly associated with HBV infection, were collected from Out Patient Department of Dermatology, Shaikh Zayed Hospital,

Lahore from April, 2003 to March 2005. The sample was calculated on the basis of 95% C.I, 5% margin of error and expecting HBsAg the carrier state in 10% of cases and 4% in comparative group. After informed consent the study subjects were enrolled by purposive sampling technique.

Patients with known liver disease, with suspicion of lichenoid drug eruption or who had received HBV vaccination, were excluded from the study.

Detailed history and clinical examination was noted down. Written consent about blood test was taken. Five ml venous blood of each patient was taken. Clear serum was obtained after centrifugation. The serum was used for HBsAg by ELISA technique.

Statistical analysis:

By using software SPSS version 11.0, data entry and analysis was done. Nominal variables were reported as frequency/percentage while numerical data was recorded as Mean±SD. Nominal variables were analyzed using Chi. square test. The difference was regarded as statistically significant, if the *p*-value was less than 0.05.

RESULTS

Two hundred patients of LP and equal number of other dermatoses, not reportedly associated with HBV infection, were enrolled for the study. Age of the LP patients ranged between 9–79 years (mean 39.6±9.67 years). The male and female ratio was 1:1.8 with maximum number of patient in the fourth decade. Age of patients of control group ranged between 3–76 years (mean 35.99±20.18 years). The male:female was 1:1.4 with maximum number of patients in third decade (Table-1).

Table-1: Age and sex distribution of LP patients and Control Group

Age (Years)	LP Group			Control Group		
	Males	Females	Total	Males	Females	Total
0-10	3	3	6	3	3	6
11-20	18	9	27	7	17	24
21-30	11	11	22	27	31	58
31-40	9	48	57	21	26	47
41-50	12	22	34	12	24	36
51-60	5	15	20	9	11	20
61-70	8	20	28	3	2	5
71-80	6	-	6	-	4	4
Total	72	128	200	82	118	200

Three patients from LP and 7 patients from control group were found positive for HBsAg. Their age and sex distribution is given in Table-2. The test of significance for proportions showed no significant difference ($p>0.1$) in two study groups regarding carrier state of HBsAg.

Table-2: Age and sex distribution of HBsAg positive cases

Age (Yrs)	LP Group			Control Group		
	Males	Females	Total	Males	Females	Total
0-10	-	-	-	-	-	-
11-20	-	-	-	-	2	2
21-30	-	-	-	1	1	2
31-40	-	-	-	1	1	2
41-50	1	2	3	-	-	-
51-60	-	-	-	1	-	1
61-70	-	-	-	-	-	-
71-80	-	-	-	-	-	-
Total	1	2	3	3	4	7

DISCUSSION

Hepatitis B virus, a member of hepadna virus family has global distribution. The prevalence of its carrier stage varies from less than 2% to more than 8% in different regions of world.[23] Hepatitis B is highly endemic in Pakistan and its incidence is increasing within last decade.[28]

Prevalence of carrier of HBV among various groups of our population is 2.11% to 10%.[24-29] HBV has been associated with a number of hepatic and extra hepatic manifestations. Lichen planus is one of the various dermatological syndromes associated with this viral disease. In our study 3 patients (1.5%) from study and seven patients (3.5%) from control group were positive for HBV infection. There was no significant difference ($p>0.1$) between two groups. Our result is in contrast to the results of various other studies reported from Turkey, Nigeria and Cukorova region.[14-16] In conclusion, we find that to date there is no local data available showing the relationship of LP and HBV infection. This is first study done to find out any association between these two diseases. As our study shows no significant prevalence of HBsAg among patients with LP, HBV seems to have no special role in the pathogenesis of LP in our population.

CONCLUSION

No association between HBV and LP was found in our population. In view of our results, we recommend that viral serology for hepatitis B of LP patients may not be done as a routine screening process.

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