

Hepatitis C Virus serology in patients with lichen planus

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Citation

C Udayashankar, A Nath, M D'Souza. *Hepatitis C Virus serology in patients with lichen planus*. The Internet Journal of Dermatology. 2008 Volume 7 Number 2.

Abstract

Background: The pathogenic role of Hepatitis C virus in the causation of lichen planus remains controversial. While a number of studies from several centers across the world show an association between HCV and LP, a good number of studies have refuted such an association. **Aims and objectives:** To study the association between Hepatitis C Virus infection and lichen planus in our institution. **Methods:** Third generation ELISA (Innova HCV ELISA) for anti-HCV antibodies in the plasma/serum was performed in 40 consecutive cases of lichen planus (confirmed by clinical examinations and histopathology) and equal number of age- and gender-matched healthy volunteers from October 2001 to May 2003. **Results:** ELISA test for anti-HCV antibodies was negative in all 40 cases as well as in 40 control individuals. **Conclusion:** There was no association between Hepatitis C Virus infection and lichen planus in our population in South India.

INTRODUCTION

Lichen planus (LP) is a papulosquamous disorder characterized by pruritic, purple, polygonal, plain topped, papules occurring in the flexor aspects of the extremities with occasional nail (classically pterygium) and oral mucosal involvement. ¹ The exact etiology of lichen planus remains elusive. Several pathogenic mechanisms like immunogenic, genetic, infective, metabolic and many others, with emphasis on interaction between endogenous-genetic-autoimmune and exogenous-environmental components such as drugs or infections have been proposed to play a role in the etiology of the disease. ² The role of Hepatitis C virus (HCV) infection in the causation of lichen planus (LP) is controversial as many studies from around the world, ³ including several studies from various parts of India, have shown contradictory results. We conducted a study to look for an association between Hepatitis C Virus infection and lichen planus in our institution in Pondicherry.

MATERIALS AND METHODS

Third generation ELISA (Innova HCV ELISA) for anti-HCV antibodies in the plasma/serum was performed in 40 consecutive cases of LP (confirmed by clinical examinations and histopathology) and an equal number of age- and gender-matched healthy volunteers from October 2001 to May 2003.

RESULTS

The mean age of cases and control groups were 32.1 ± 10.7 years (range of 19-56 years) and 32 ± 9.3 years (range of 20-54 years), respectively. Number of cases and controls in the different age groups showed no significant difference. There were 19 males and 21 females in both the groups. There were 32 cases of LP involving the skin only, 4 cases involving the skin and the oral mucosa, 3 cases involving the oral mucosa only, and one case of nail LP. ELISA test for anti-HCV antibodies was negative in all the LP patients as well as in all the healthy volunteers.

DISCUSSION

Mokni et al ⁴ published the first report of LP associated with HCV infection. Subsequently, a number of studies claimed such a causal association between HCV infection and LP. ³⁵⁶ A number of studies, on the other hand, failed to show any association between HCV and LP. ³⁷⁸⁹¹⁰¹¹ Nagao et al ³ demonstrated the existence and replication (by RT-PCR) of HCV within oral LP lesions. Erkek et al ³ found that the detection rate of HCV-RNA was higher in the lesional skin compared to non-lesional skin in HCV-infected LP patients. Oral LP after treatment of HCV infection with IFN- α , ¹²¹³ and subsidence of such lesions after stopping IFN therapy ¹³ have also been reported. The prevalence of HCV in LP patients shows wide geographic variations – 0% in England, ¹⁴ 3.8-28.6% in France, ³ 0-55% in USA, 37.8-62% in Japan, ³ and 4-65% in Italy ³. The reason for such variability is not

clear, but may be because of geographic variations or a genetic susceptibility.

From an epidemiological standpoint, the main studies describing a strong association with HCV have been conducted mostly in Japan, Italy and Spain, all areas with a high HCV endemicity. ¹⁵ Campisi et al ¹⁵ found that a weak association between oral LP and HCV infection may exist only in areas where HCV is endemic. In India, studies conducted in Calicut, ¹⁶ Kolkata, ¹⁰ New Delhi ¹⁰ have failed to demonstrate a statistically significant association between HCV and LP, whereas studies conducted in Hyderabad and Bangalore ¹⁰ have shown a significant association. We have not found any association between lichen planus and HCV infection in our tertiary care center in Pondicherry. Whether the absence or the presence of an association between HCV infection and LP in different parts of India is due to the varied prevalence of HCV infections in different parts of the country is difficult to emphasize, as no consistent association between high prevalence of HCV infection in the population and the occurrence of LP has been found in the Indian studies (Table 1).

Figure 1

Table 1: Association between HCV infection and LP compared with the prevalence of HCV infection in different parts of India

Place of the study	Region	Association between HCV and LP	Prevalence of HCV infection
Delhi	North India	Negative ¹⁰	0.78% among VBD ¹⁸ to 1.85% among VBD ¹⁹
Kolkata	Eastern India	Negative ¹⁰	0.8% (Virology dept. data) ¹⁰
Calicut	South India	Negative ¹⁷	0.33% among VBD ²⁰
Hyderabad	South India	Positive ¹⁰	2.5% among VBD ¹⁹
Bangalore	South India	Positive ¹⁰	0.1% among VBD ^{**}
Pondicherry	South India	Negative (Present study)	4.8% among hospital patients ²¹

- VBD – Voluntary Blood Donors. They mostly come from normal healthy population. ¹⁸
- ** – Prevalence data is obtained by personal communication from a tertiary care center in Bangalore.

Very recently, Carrozzo and Gandolfo maintained that the substantial geographical heterogeneity could be partially explained by immunogenetic factors related to the population. ¹⁷ Thus, the role of HCV in LP could be postulated to be one of a triggering factor in suitable environmental, immunogenetic and geographic conditions. ¹⁷

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