

Screening of Hepatitis B and C Infection in Systemic Lupus Erythematosus (SLE) Patients

Moeen Akhtar Malik, Akmal Hussain, Junaid Mustafa, Ghulam Fareed, Habib ur Rehman, Zohaib Sadiq

ABSTRACT

Objective: To screen the SLE cases for Hepatitis B and C virus infection. **Study design:** Cross Sectional Study. **Settings:** Sheikh Zayed Hospital and Medical college, Rahim Yar Khan. **Duration:** January 2018 to December 2018. **Methodology:** In this study the diagnosed cases of SLE of either gender and age were included. The cases were included that had a documented diagnosis of SLE either on clinical criteria for at least 1 year or more with or without treatment. Then these cases were assessed regarding their clinical and demographic features and their blood sample were drawn, 5 ml of blood was taken and sent to the laboratory of the same institute where they were checked for HBsAg to label for Hepatitis B virus and HCV antibodies to label HCV infection. All these results were then collected and recorded. **Results:** In the present study there were 39 cases diagnosed with SLE. The mean age of the participants was 27.13 ± 7.29 years and mean duration of SLE was 5.13 ± 1.36 years. There were 5 (12.82%) males and 34 (87.18%) females. Out of 39, 1 case (2.56%) had known history of prior infection with HBV and 3 cases (7.69%) of HCV infection. On screening overall HBsAg was seen in 3 cases (7.69%) and HCV antibodies in 08 cases (20.51%). **Conclusion:** HCV infection is more common than HBV and is almost 3 times more in SLE cases.

Key words; HBV, HCV, SLE

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INTRODUCTION

Systemic lupus erythematosus (SLE) is one of the highest prevalent autoimmune disease and it has the tendency of multi organ involvement. It is more prevalent in America, Asia and Africa as compared to the Caucasians and is higher in females as compared to males with a ratio of 10:1 and in the younger age groups. Its prevalence is highly variable across the globe. Its detection at earlier or later stage and lack of diagnostic facilities and knowledge can be one factor for low prevalence in few areas as compared to developed ones.¹⁻³

SLE is an immunocompromised and autoimmune state that can virtually involve and damage any part of the body ranging from skin to lung and heart and brain etc. Liver is usually devoid of these complications and in nearly 25 to 50% of the cases during the course of disease, are affected liver enzymes.⁴⁻⁵

Amongst the infections, hepatitis B and C are the most prevalent and former is considered as the most common globally;⁶ though the number of hepatitis C is rising after the start of vaccination programs against HBV and the lack of vaccination against C virus. The highest prevalence is in South East Asia which covers around 75% of the cases.

There is an ongoing debate with different degree of association regarding the viral infections and either development or propagation of the disease activity in autoimmune disorders. Epstein Bar Virus (EBV) and cytomegalovirus (CMV) is the most studied viral infection in this context.⁷⁻⁹ However, the association and prevalence of HCV infection in SLE is always controversial with high degree of variance in previous data. The local data

was lacking and majority of the studies were done in the West and that's why this study was planned.

OBJECTIVE

To screen the SLE cases for Hepatitis B and C virus infection.

METHODOLOGY

Study Design: Cross Sectional Study.

Settings: Sheikh Zayed Hospital and Medical college, Rahim Yar Khan-Pakistan

Duration: January 2018 to December 2018.

Methods: The documented cases of SLE of either gender and age were included. The cases were included that had a documented diagnosis of SLE either on clinical criteria or Anti dsDNA positive for at least 1 year or more with or without treatment. Then these cases were assessed regarding their clinical and demographic features and their blood samples were drawn. 5 ml of blood was taken and sent to the laboratory of the same institute where they were checked for HBs Ag to label for Hepatitis B virus and HCV antibodies to label HCV infection. All these results were then collected and recorded.

Statistical Analysis: SPSS version-23.0 was used for statistical analysis. Mean and SD were calculated for numerical data and frequency and percentages were calculated for nominal data.

RESULTS

In the present study there were 39 cases diagnosed with SLE. The mean age of the participants was 27.13 ± 7.29 years and

mean duration of SLE was 5.13±1.36 years. There were 5 (12.82%) males and 34 (87.18%) females as shown in table 1. Out of 39, 1 (2.56%) case had known history of prior infection with HBV and 3 (7.69%) cases of HCV infection (table 1).

Table 1: Demographics (n=39)

Variables	Mean ± SD	Range
Age	27.13±7.29	14-33
Duration of SLE	5.13±1.36	1-8
Variables	Frequency	Percentages
Males	5	12.82%
Females	34	87.18%
H/o Viral Infection before SLE Diagnosis		
HBV	1	2.56%
HCV	3	7.69%
None	35	89.75%

On screening overall HbsAg was seen in 3 (7.69%) of the cases and HCV antibodies in 08 (20.51%) of the cases as shown in Figure 1.

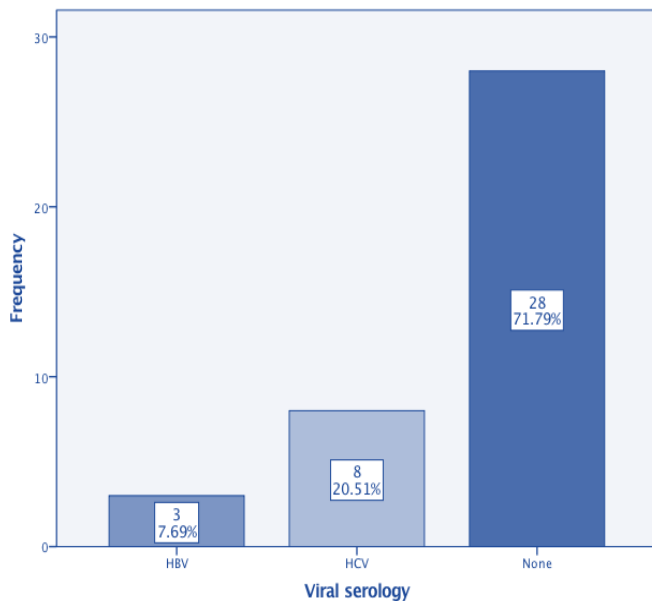


Figure 1: Screening for HBV and HCV (n= 39)

DISCUSSION

Autoimmune disorders are of great concern as they are multisystem disease and pose great social, psychological, medical as well as financial burden on the cases in terms of multisystem involvement. Along with this, the rising trends of viral infections are another dilemma that is not only a burning

issue in the immune competent cases, but also for these SLE cases as they further deteriorate the overall condition of the subjects and the treatment augmented suppresses the immune systems.¹⁰⁻¹¹

In the present study on screening overall HbsAg was seen in 3 (7.69%) of the cases. The data regarding the prevalence of seroprevalence of hepatitis B and C in auto immune disorders like SLE remained highly variable and number of studies conducted in the past had controversial role, especially in building the causality relationship of hepatitis and the development or flare up of the autoimmune disorders.¹²⁻¹⁴

In a study done by Watanabe et al also found a relatively lower number of cases having HBV in SLE cases and they proposed a relatively protective mechanism of HBV in development of SLE and the seroprevalence in their study was less than 1% of the cases.¹⁴ In other studies done by Kivity S et al and Liu X et al also supported the abovementioned finding that HBV has a protective role in SLE flares.¹⁵⁻¹⁶ In a meta-analysis the adjusted OR of Hbs Ag in cases of SLE was 0.21 again indicating its lower risk.¹⁷

In the present study anti HCV antibodies were seen in 08 (20.51%) of the cases. These results were similar to the results of the previous studies done in the past where they have almost similarly shown that HCV infection is a high burden entity in cases of SLE as compared to HBV. In a met analysis as compared to control group, there was significant number of cases having concomitant SLE and HCV infection ($p < 0.05$).¹⁷ This variability of these viruses (Hep B and C) can be as they belong to the different families and have different mode of involvement of these cases. In other studies, done by Reherrmann B et al and Costa CA et al also revealed a higher prevalence of HCV infection and in the former study this difference was statistically high for HCV with p value < 0.05 .

CONCLUSION


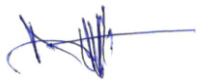



HCV infection is more common than HBV and is almost 3 times more in SLE cases.

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AUTHORSHIP AND CONTRIBUTION DECLARATION

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